Clinical Medicine

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Dr. Alexis Carrel

FRANCE has given us a number of men who have become prominent in various fields of medical science, among whom Alexis Carrel occupies a high place.

He was born in Lyons, France, on June 28, 1873. He studied in the French schools and attended the University of Lyons, from which he received the degree of B. S. in 1891. He later entered the medical department of the University, became an interne in the Lyons Hospital and was graduated as a Doctor of Medicine in 1900.

In 1904 he came to the United States and soon attracted attention by his articles (with Dr. C. G. Guthrie) on the anastamosis of blood-vessels and the transplantation of limbs.

His work was of so unusual and interesting a nature that, in 1909, he was made an associate member and in 1912 a member of the Rockefeller Institute for Medical Research, which appointment gave him free scope for carrying on his remarkable experiments.

In 1912 he was awarded the Nobel Prize for Medicine because of his highly original and valuable discoveries in connection with surgery of the blood-vessels and the transplantation of organs and tissues.

In 1913, he married Anne de la Motte, of Brittany, France.

He has been granted the degree of Doctor of Science by Columbia, Brown and Princeton Universities.

When the War broke out, Dr. Carrel, who had been a member of the French Army Medical Corps, was placed in charge of the military hospital at Compiègne, where he developed the elaborate apparatus and technic for using the chlorine antiseptic which had been worked out by the American chemist, Henry D. Dakin, working with the medical corps of the British Army. This method was universally known as the Carrel-Dakin treatment and saved many hundreds of lives during and after the war.

Dr. Carrel is still a young man, and while his published work, based upon his own researches, has been voluminous and original, so that he is recognized as one of the world's foremost authorities on blood-vessel surgery, he is still in the midst of even more surprising investigations. The work which he is now doing in the cultivation of living tissues apart from the body and the studies based upon this work may well revolutionize some of our fundamental ideas in biology.

A THANKFUL HEART

It was a wise custom which the fathers of our Country established—that of setting aside a day to be spent in the giving of thanks for the blessings bestowed upon them.

As we look back to those early days, it seems as though they had little for which to be thankful. They lived in cabins made of logs which they had hewed from the virgin forest with incalculable toil; they were in constant danger from hostile Indians and other enemies; they were in a strange, wild land and as far removed from their neighbors living at a distance of ten miles as we are from people a hundred or two miles away; they had no news of the world nor any recreations save church-going and funerals; all household tasks were matters of heavy personal labor; they were hot in summer and cold in winter; and if they fell ill there was, as a rule, no one to minister to their needs.

But, on the other hand, their cabins and the hand-wrought furniture in them were *their own;* the ever-present dangers did not always strike, and were steadily growing less imminent; their very isolation strengthened the ties of family love and of helpfulness toward their immediate neighbors; their church-going was such as they elected —not a ritual which was forced upon them; they experienced a joy in *personal accomplishment* which few of us now know; heat and cold and other inconveniences were a small price to pay for *freedom* and the excitement of seeing their crops ripen and the wilderness change into farms; and because of their wholesome life they were rarely ill, and when sickness came the neighbors rejoiced in the opportunity for personal service.

And so they were glad, and gave thanks!

If we would do a little more looking back to the America of our grandparents, and a little less fruitless fault-finding with present conditions; if we would turn our attention more inside, to our own hearts, and less outside, to the things our neighbors have that they *seem* not to have deserved, we might find more cause for sincere thanksgiving.

We are living in one of the most wonderful periods the world has ever known. Material progress is moving at such a rate that it makes us catch our breath. Progress is being made in ethical, cultural and spiritual lines such as has not been seen for centuries. More people live comfortably and happily today than ever lived so before.

More than ever in the world's history a man's own efforts are able to determine his standing and advancement. Opportunity without limit is ours!

So, today, we should give thanks for all the multitude of material things that go to make our lives easier and richer and more colorful and sweeter; for the chance to study and to grow; for the possibilities of unthinkable future progress, in which we may take part.

And then, each one of us must look deep down, inside, and contemplate with a calm and silent gladness all the multitude of intensely personal joys and blessings which can not be spoken.

So let us, one and all, give thanks and renew our pledges to our better selves.

Adapt thyself to the things with which thy lot has been cast.—*Marcus Aurelius.*

APOCYNUM

Apocynum is the dried root of *Apocynum cannabinum,* popularly known as Canadian hemp or dogbane. It grows in many parts of the United States and is related to the herb from which the Somalis make their arrow poison, ouabaine. It contains apocynin, a nonglucocidal active principle; apocynein, a glucocide; and various inert matters.

This plant is frequently confused with *Apocynum androsæmifolium,* which is much less active, so that the preparations of the crude drug are often very unsatisfactory in their effects. For this reason it is especially necessary to use the active principle or a standard concentration prepared by a reliable pharmaceutical house.

Physiologic action.—Apocynum acts upon the *cardiovascular system* in a manner similar to the action of *digitalis.* It slows the pulse-rate and raises the blood pressure, thus increasing the flow of urine in cases where it has been lessened by circulatory atonicity. Like digitalis, it is more or less cumulative in its effects, but is said to act more promptly, thus being superior to that drug when time is a factor in the case.

In addition to its *diuretic effect,* which is more pronounced than that of digitalis—so much so that it has been called the "vegetable trocar"—apocynum is also an active diaphoretic and, in large doses, an emetocathartic.

Therapeutic Uses.—As a means for removing *massive edema* or *general anasarca*

from the tissues, especially when these conditions are due to hypotonicity of the cardiovascular-renal apparatus, with low blood pressure, there is probably no remedy so effective as apocynin or one of the active concentrations of the drug. In these cases the prompt and tremendous increase in the urinary output, with coincidental disappearance of the dropsy, is very striking. In organic disease of the myocardium, kidneys or liver, it is much less valuable. It is *contraindicated* in the presence of fever with a hard, full pulse and in cases of arterial hypertension.

The diaphoretic effects make it useful in some cases of *malaria*, *pneumonia*, and similar conditions; while the combined elimination by skin and kidneys suggests *hydrocephalus*, *uremia* and other conditions where excretion is to be stimulated or local collections of fluid removed.

Its general tonic effects have led to its successful use in case of *passive menorrhagia*, *leucorrhea* and other pelvic disorders where the uterus and adnexa are in a boggy and relaxed condition, as well as in *atonic dyspepsia*, with nausea, vomiting and tympanites.

Dosage.—The most satisfactory method of giving apocynum is in *small and frequent doses* (1/12 grain of the active principle or concentration or 1 to 5 minims of a *reliable* fluid extract—5 to 20 minims of the tincture) every 2 hours until the blood pressure is raised to a satisfactory point or the desired effect is produced. The dosage is then reduced so as to just maintain the effect, remembering always the possible danger of accumulation. Irritation of the stomach or diarrhea indicate *toxic action*, and if they appear the dose must at once be reduced.

Apocynum, while having no very wide range of usefulness, is a drug which produces remarkably gratifying results in properly selected cases and every physician should understand its value and limitations and be prepared to employ it in conditions where it is indicated.

Our national health is physically our greatest asset.—Theodore Roosevelt.

GAS WARFARE

Some years ago a group of sentimentalists, wholly uninformed as to actual conditions or with a large equipment of misinformation, started in to end the practice of animal experimentation and the use of serums and vaccines of all sorts. We are still laboring to counteract the effects of their misguided and pernicious activities.

Since the war a similar group of enthusiasts, with more zeal than sense, have undertaken to prohibit the use of gases in warfare. The bulk of our citizenry are so sunk in complacent indifference, and our legislators are so hypersensitive, in their political cuticle, to the vibrations produced by the folks who make the most noise that, in the deplorable event that we should again have to enter into armed conflict, there is serious danger that we will be badly handicapped by lack of investigation and preparedness in connection with this modern weapon of offense.

No matter how high-minded a country may be, or what she may have undertaken in time of peace, it is tolerably certain that, under the pressure of adverse circumstances in war, she will defend herself by any means which seems likely to accomplish the purpose. We are so confiding a people that, under an agreement to disarm, we will fulfil the letter and spirit of the agreement, whether the others do so or not. That is very fine and altruistic, but is open to some criticism from a practical standpoint. Remember how Lord Charles Beresford remarked, "Battleships are cheaper than battles."

Every *new* method in warfare has been decried as "barbarous". When the Romans first used cross-bows and catapults instead of swords and battle axes, it was "barbarous." And so was gunpowder, at first. We are scarcely likely, however, to go back to the bow and arrow and the war-club.

But, laying aside all utilitarian considerations for the moment, let us see whether there is any basis of fact in the charge made by the agitators that gas warfare is a barbarous and inhuman method of attack.

Of course, the first use of gas by the Germans was against troops which were wholly unprepared to meet it and were thrown into a panic by the unknown danger. In this case the casualties were very numerous and severe. And this is an index of what will happen, in the future, to the troops of any nation that goes to war inadequately equipped for offense and defense with and against lethal gases.

As time went on, although the use of chemical substances became more and more general, and the substances used became more and more powerful, the defensive measures, by means of gas masks and other

arrangements, more than kept pace, so that the deaths from warfare gases steadily decreased.

It is true that a well-organized gas attack can hamper or put entirely out of business a larger proportion of the troops attacked than can any other weapon now known to us. That, of course, is the prime object in warfare. The barbarity or humaneness of the weapon used is determined by what happens to the disabled soldiers *after the battle is over.*

In the remarks which follow, we have studied not only American but also English and German statistics and comments. Their conclusions are, in the main, identical.

The total British Casualties in the War were 3,059,000, of whom 868,000 were killed —one out of every *three.* The gas casualties were 181,000, with 6,000 deaths—one out of every *thirty.*

In the American army, the proportion of deaths to all casualties was one to *four;* with gas casualties it was one to *fifty.*

The Germans reported a death rate of 30 percent for all their casualties, while gas showed only 3 percent.

On the basis of these figures one feels safe in declaring that gas is from 10 to 12 times more *humane* than any other weapon now in general use.

As to the later disabilities following gas casualties and those resulting from bullets and high explosives, the British pensioned 35 percent on the basis of wounds and only 12 percent for gas casualties, and of these 12 percent only 20 percent are total disabilities.

An American commission carefully studied the situation several years after the War and reported that the late disabilities resulting from gas casualties were, in general, neither frequent nor severe; especially was there no evidence that such casualties predisposed to the development of tuberculosis.

It seems unlikely that chemical warfare will cease until all war ceases or it is superceded by something more effective.

Gas can produce the largest military effect with the least expenditure of life and treasure of any weapon now known.

It is based on an organized chemical industry and fosters such industries, to the great profit of the country in general.

The country which enters the next war inadequately equipped for offensive and defensive chemical warfare will be enormously handicapped and will probably be defeated.

Think these things over. Our Congressmen and senators have been deluged with sentimental protests from ill-informed persons. It is time they found out how the responsible and thoughtful element of the population feel about this matter. Let us all inform ourselves, so that we can speak with some authority, and then write to our representatives in Congress and give them our views.

There is no time like the present. The anile warblers, male and female, keep up their claque, without ceasing. Let *us* get busy, *now!*

Man substitutes for his mind and sense limitations, emotionalism and fanaticism, to jolly himself along.—Dr. A. B. Jamison.

WORK AND PARADES

The summer is over—trite but true—and we hope every one who reads these lines has had a thoroughly satisfactory vacation and has returned refreshed and re-created.

Chicago has been gay and vocal with the pageantry and blare of parades and rodeos and other splendors whereby groups of men strive to emphasize their individual and collective importance in the scheme of things. Meantime the medical societies have suspended their meetings.

Now things are settling down. The tinsel and gaudy uniforms and brass bands are no longer obstructing the traffic. The meetings of physicians are being resumed with vigor and enthusiasm. This is another year for work and progress.

But while we are tightening up our belts for renewed effort, let us not forget that, while we can not properly march up and down the streets with banners and eye-filling regalia, there is an undoubted value in the enthusiasm which comes from the association of men who are imbued with a common purpose and are following similar ideals.

Nothing can take the place of the hard, studious, painstaking, conscientious work which each man does in his own office, operating room, laboratory and at the bedside; but there is an uplift and a joy which comes to us only by regular and frequent meetings with our fellows, where we can talk over our successes and our failures among sympathetic friends, and listen to the outpouring of their enthusiasms.

Enthusiasm is contagious, or thousands of Elks, Odd Fellows, Shriners, *et id genus omne,* would not march miles in the glaring sun or in a downpour of rain, and pay scores

and hundreds of dollars, individually, for the privilege of doing it.

Our medical societies are our parades and rodeos. Let us use them to stimulate our professional enthusiasm as well as to increase our professional knowledge. Let us get back to work with the resolve to do more than we ever did before for our patients, and also to do a lot more for the success of our local, state and national societies, by attending their meetings and taking intelligent part in the discussions.

Our societies need us; but we need them even more.

Let us show the world that there is as much cordial and helpful goodfellowship among doctors as can be found in the clans of the Woodmen or Knights Templar.

At a distance from home a man is judged by what he seems—near home, by what he is.—Chinese Proverb.

PROFESSIONAL COURTESY

There are certain things that, if they are not reckoned as a part of our code of medical ethics, ought to be so reckoned. If a physician advertises his skill in the newspapers he will probably be expelled or excluded from his local and national medical societies; but if he steals a patient who is referred to him by a brother practitioner he can usually get away with it, because it is hard to prove.

Because a man has never been in jail, it does not necessarily follow that he is an honorable, high-minded gentleman.

When another physician refers a patient to you for some particular form of treatment which he does not feel competent to administer, or for an opinion on some phase of the case which he feels he is not qualified to evaluate, he is paying a high compliment, not only to your professional acumen but to your integrity and honor. He is giving you an opportunity to undermine his influence with that patient in ways for which he can never call you to account.

Whenever you are called in consultation in a case, it is because the man who calls you believes that your opinion will be valuable to his patient, in that particular case. The family and friends of that patient can easily be made to believe that your opinion is more valuable than that of the regular consultant upon all matters—if you would be mean enough to attempt such a thing.

We firmly believe that the overwhelming majority of all physicians are punctilious, unselfish gentlemen, but there must be a certain number who are not, else why should there be the reluctance to refer cases and to call consultants in many sections of the country, particularly in the smaller communities?

The etiquette of these professional functions, like that of most other affairs of life, is based upon the golden rule—do nothing to the other fellow which you would not be perfectly willing to have him do to you. It may not be amiss, however, to call attention to some of the details.

When a case is referred to you for an examination and an opinion, the reports of your findings should be made *to the referring physician*, not to the patient. The man in charge of the case can probably form a better general opinion of the case than you can and is better qualified, after a study of your findings, together with what he knows about the patient, to decide what form of treatment is indicated. Give him a chance, in any case.

If you are called upon to give some special form of treatment, that does not necessarily mean that you are better qualified than the referring physician to advise the patient as to other matters. Probably your opinion, outside of your specialty, is of less value than his. If you *think* you see other things which ought to be done for the patient, *consult the regular attendant before doing them*. In this way you may save yourself from embarrassing mistakes, and you are almost sure to make a professional friend.

When you are called in consultation, be sure that you have, *tactfully*, obtained sufficient information about the case so that you can form an intelligent opinion. Talk the matter over with the doctor in charge and *listen to what he has to say*. It may be that he has some valuable ideas. When you two have reached a decision as to the diagnosis, prognosis and treatment, let *him* convey this decision to the patient and the family, (unless he *asks* you to do so), and then corroborate his statements. It is rare that you can not *honestly* say something which will confirm their faith in their regular medical attendant. Do you always say it? Would you like to have others say that kind of things about you?

Remember that when one of your confrères refers a case to you or calls you in consultation he is placing his professional reputation in your hands. The higher your standing, the more people—both doctors and laymen—are looking up to you, not only as regards your medical knowledge but as to your caliber as a man and a gentleman. Is

your conduct always such as to bring credit and respect upon your high and noble profession?

The greatest hope for the medical fraternity in these troublous times lies in the closest possible cooperation, the most implicit confidence and the highest degree of solidarity of aims and principles among its members, and these are possible only if every one of us conducts himself, at all times, with the most meticulous professional courtesy, based upon an altruistic desire that the greatest good may accrue to the greatest number.

The practice of medicine is considerably more than a profession or a business. From its very nature, it is a powerful social agency for upbuilding and uplifting humanity.—Dr. Morris Fishbein.

THE WORLD'S BIG SISTER

With the passage of every year this mundane sypheroid which is the scene of our present activities grows smaller and smaller and the serious bumps it receives, in the shape of flood, tornadoes, earthquakes and such like effect us all more and more nearly and personally.

With this bringing of what were formerly distant disasters almost to our back door, so to speak, the importance of having some one—some world-wide agency, of course—to attend to the injuries received by this little world of ours becomes a matter of more pressing individual concern.

The Red Cross is the World's Big Sister and every one of us should be eager to have an opportunity to help in holding up the hands of this international agency of human relief and thus in assisting Big Sister to bind up the World's wounds more adequately and expeditiously.

Again this year the annual roll-call of the Red Cross will be held from Armistice Day through Thanksgiving—November 11 to 25. Let every citizen—every man, woman and child—in the country take a part in this great and glorious work, no matter how small the part may be.

If we are not moved by altruistic motives, self-interest alone should prompt us to do our share for no man knows that his own community may not be the next one which will need help.

Big Sister

Leading Articles

Surgical Diathermy in Accessible Neoplasms*

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IN spite of extensive literature published on the subject, both in this country and abroad, much confusion and misunderstanding still exist as to the merits and utility of surgical diathermy. Because of this we desire to emphasize the importance and value of this method without in any way detracting from the value of other measures. It may therefore not be amiss to briefly define and develop the rationale of this agent and indicate its utility and technic.

The word "diathermy" coined by Nagelschmidt in 1905, means to heat through. Heat created by a well-constructed high frequency apparatus is endogenous in character, and its effect is due both to the resistance opposed by the tissues to the invading electric current and to the alternating rearrangements or oscillations of the ions in the path of the current. Electric energy is thus converted *within* the tissues into coloric energy. The intensity of the heat created within tissues can be regulated by the density of the mass, the capacity and volume of the current and the size of the active electrode. Thus, any degree of heat can be produced and can be utilized, as physiologic in intensity, such as used in medical diathermy—a heat that does not impair function or devitalize structure—or it can be raised to a degree sufficient to devitalize or completely destroy any accessible neoplasm by desiccation, coagulation or charring.

History of Diathermy

It is interesting to note, from an historical point of view, that attempts were made to utilize electric energy by way of the high frequency current upon neoplastic malignancies shortly after D'Arsonval's communication to the *Société de Biologie* of his development of an electric energy that is today recognized as diathermy.

While full appreciation of the value of high frequency currents was lacking, due to a lack of experience, the ever-present and uncontrollable long spark from the high voltage apparatus was early recognized as a possible factor of great value in cauterizing and carbonizing malignant growths. Fulguration or sparking was therefore looked upon by earlier investigators as a possible and valuable factor in destroying neoplasms. Revière, of France, a contemporary of D'Arsonval, reported the use of high frequency fulguration in malignant neoplasms before the Congress of Electrology and Radiology at Paris in 1900. He claimed distinct improvement in the carcinomas thus treated.

Pozzi, the distinguished gynecologist, in 1907 reported to the Academy of Medicine of Paris the cure of superficial and even deep-seated cancers by the action of the socalled Oudin sparks. Subsequent investigation proved that fulguration merely raised the local temperature to an enormous height and carbonized the neoplasm superficially, thereby defeating the very purpose it set out to attain. Deeper destruction of the neoplasm was thus prevented by the protective carbonization that the sparking set up.

In Berlin, Nagelschmidt, a keen and independent student of electrology, as well as a gynecologist of note, followed the researches of Professor D'Arsonval with deep appreciation. Because of his investigations certain important innovations in the construction of high frequency apparatus followed. Voltage was reduced, frequency was raised and resonance improved. Modern medical and surgical diathermy follows the principles laid down by Nagelschmidt. Furthermore, electrocoagulation, a term later popularized by Eugene Doyen, was first used by Nagelschmidt and demonstrated by him in 1908 at a Congress in Budapest, and introduced by him in London at the St. Bartholomew Hospital in 1910.

Pfahler and Clark, of Philadelphia, were the first American pioneers to appreciate the value of electrothermic surgery, and electrodesiccation was a term introduced and developed by Clark. His extensive investi-

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gation and experience places him in the forefront as one of our ablest authorities in this field of surgery.

Nomenclature

It is to be regretted that a redundant nomenclature has developed in association with the surgical method of diathermy, such as electrocoagulation, electrodesiccation, monopolar and bipolar technic, endothermic surgery, fulguration, etc.

Since the fundamentals of high frequency currents depend upon a current that is alternating in quality, it is confusing to think in terms of polarity when no electrolytic effect can ever take place. Coagulation and desiccation are the only changes in the cellular structure, according to the degree of heat introduced at the active electrode. Both methods produce destruction of cellular elements proportional to the degree of heat created within the tissue. Surgical diathermy is an inclusive term fitting the various technics in use.

To accomplish coagulation one employs two terminals and hence two electrodes; to accomplish dehydration or desiccation one employs a single electrode of higher voltage from an Oudin or Tesla terminal. In coagulation the degree of heat can be measured from the attached meter to the apparatus, which indicates heat or amperage. In desiccation or dehydration the important factor is the rise in voltage and the relative fall in heat or amperage; hence the meter gives little or no indication to the amount of electric energy introduced into the tissue. Experience and ocular demonstration, however, are convincing guides in the latter as well as the former method. The visual evidence of coagulation is the gradual transformation of tissue in the vicinity of the tissue under operation, into a grayish mass, followed rapidly by a bubbling about the electrode and a concomitant escape of a vapor-like gas. On removal of the electrode the treated tissue is of a soft, cheesy consistency, and is readily scraped away by a dull curette. If coagulation continues beyond this point stellate sparking is seen to escape from and about the point or disc electrode. The underlying or adjacent tissue becomes hard and firm and carbonization follows.

In desiccation the picture somewhat parallels that of coagulation, the difference being only one of degree, hence destruction of tissue is more superficial and is accomplished mostly by the process of dehydration. It will be remembered that in desiccation the effect or end result is attained by minimal heat and maximal voltage. The belief that coagulation and desiccation are one and the same is therefore to be dissipated. Further data may also be obtained from microscopic studies of sections when they are subjected to both of the methods under discussion, proving further the difference in effect.

Effects of Coagulation and Desiccation

Recent hystopathological studies, by Clark, of tissues submitted to desiccation and coagulation are of interest. "The material used," says Clark, "consisted chiefly of epitheliomas (basal and squamous cell type) and normal tissue of laboratory animals. The investigation entailed the study of the effect of the current on the cells and blood-vessels in the immediate and remote areas of the field of operation. The histologic pictures obtained were so well defined and uniform as to stamp them with certain characteristics. The cells submitted to desiccation were shrunken and shrivelled and their nuclei condensed and elongated, with a suggestion of cell outline; the whole had assumed a mummified appearance. The blood-vessels were thrombosed and there were no evidences of hemorrhage. In the case of coagulation, the cell outline was entirely lost, and the affected tissue elements were fused into a structureless, hemogeneous mass, presenting an appearance not unlike hyalinization." In addition to the foregoing picture, an outlying zone of round-cell infiltration can be noted following both methods of treatment.

Clinical Application of Desiccation

It is obvious, therefore, that both of these methods have a special and separate field of application. Since desiccation attains its objective by the process of cell dehydration, the heat generated in the tissues causes an evaporation of the fluid portion of the cells, hence their shrunken and mummified appearance. Condensation, instead of disintegration of the cell protoplasm, follows and results in a minimum of scar tissue formation. This technic is therefore best suited to localized or benign lesions, or where good cosmetic results are desired or essential. Desiccation is subject to such fine control that it may be applied over a wide range of cases. Growths of the vocal cord can be destroyed without impairing phonation, and because of its accurate control, Wyeth advocates ablation of corneal ulcers by this method.

In proctology, fissures, ulcers and hemorrhoids yield promptly to the dehydrating effect of the current. Some of the benign and superficial conditions suitable for treatment with the foregoing method are: flat warts, moles, naevi, acne, urethral papilloma, caruncles, xanthoma and port wine marks, fibromas, sebaceous cysts, powder marks, lupus, leucoplakia, erosions of the cervix, papillomata of the skin and mucous membrane, tattoo marks, chronic or malignant ulcerations of the skin, basal cell epithelioma or rodent ulcers.

The small, accessible, malignant neoplasms of the basal cell type yield very readily to desiccation. Under local anesthesia, such growths as are frequently located in the inner or outer canthus of the eye are brushed over or lightly impinged with a sharp needle electrode attached to a suitable handle and a foot switch. The growth becomes dry, hard, and horny in texture, within the space of a few minutes. Uneventful healing follows and the cosmetic effect is excellent, as little or no cicatrization follows the desiccation method.

It has been our experience that desiccation is the method of choice in all accessible benign and malignant surgical lesions involving cutaneous surfaces wherein the neoplasm is localized, and where good cosmetic results are essential. Its superiority over other known measures lies in the fact that the neoplasm is promptly destroyed *in situ;* in the elimination of hemorrhage, because the blood vessels are thrombosed beyond the area of destruction, hence the diminished risk, in malignancies, of the spread of metastatic elements; and in the excellent results obtained from a cosmetic point of view, because of the minimum scar formation that follows.

Little, if any, postoperative attention need be given to the cases of desiccation. Dry or nonirritant moist dressings with adhesive tape are all that is required on cutaneous surfaces. The dressing can be removed within forty-eight hours, as by that time even the slight edema that frequently follows has disappeared. The desiccated mass usually separates from the underlying healthy structures within ten to twenty-one days, with a barely visible and pliable scar in the place of the destroyed growth.

Since basal cell carcinoma rarely metastasizes, unless by neglect, when they eventually transform themselves into the squamous cell type, early operation is of importance and is sufficient to remove the entire growth. Prophylactic x-ray therapy has frequently been resorted to, merely as a double insurance against recurrence.

Desiccation in Basal Cell Carcinoma

In our experience of cases that have been under observation from six to twenty-four months, a series of basal cell carcinomas, 74 in number, only 6 came back for further treatment. Usually the recurrence was of such small size that the regrowth was detected only by the skilled surgeon in attendance.

One such case referred to my service by Dr. Suker was a basal cell epithelioma of the right, lower, inner canthus of the eye. Following a series of x-ray treatments, the lesion showed no signs of retrogression. Desiccation was resorted to under a local anesthetic and the growth was destroyed within a few minutes. Two weeks later the patient presented herself for further observation. It was noted that the lesion had completely vanished with the exception of a small, suspicious nodule at the outer edge of the former growth. By the same method, the nodule was completely destroyed. Several observations have been made on the patient since then, when she presented herself in Dr. Suker's clinic, within the past twelve months, and no further signs of any regrowth have been observed.

The fact that this form of cancer is relatively harmless in a majority of instances has allowed the trial of a large assortment of remedies. Cancer quacks have attempted to establish reputations for the cure of generalized malignancies because of their apparent success in treating cutaneous lesions of the basal cell type. Cures have been reported by various acids and other caustics; steam on one hand and freezing carbon dioxide on the other; exposure to sunlight, quartz light, the Finsen light and the burning glass.

All of these measures have eventually proven themselves to be makeshift remedies, and today we have two measures that have stood the test of scientific investigation; namely, radiotherapy and surgery. Each is a great factor of value and the intelligent combination of these measures frequently makes assurance doubly sure of the beneficial results to be obtained.

Choice of Treatment

The treatment of choice will often depend largely on the conditions found in each individual case, the location of the lesion and the technical ability at hand. For instance, it is better to have the growth removed by

a competent surgeon than to have it mishandled by a poor radiotherapist, or vice versa.

While in early cases radiotherapy by Roentgen ray or radium is of benefit, in the late cases, with deep ulceration or sloughing and involvement of the underlying cartilage or bone, radiotherapy may have very little effect. Pfahler, one of our leading radiologists, recognizes this fact and advocates in such cases the use of surgical diathermy. Hazen, Sutton, McKee and Quigley emphasize the difficulty in treating eyelid cases and ears where the cartilage is attacked.

According to Morton, "the disadvantages of radiotherapy to be considered are, acute radiodermatitis of severe grade, with subsequent wrinkling, telangiectasis and chronic radiodermatitis; depilation of the eyelashes and conjunctivitis when used near the eye; and recurrences. Depilation of the eyelashes and conjunctivitis are real and scarcely avoidable, making it debatable whether the desiccation method of Clark is not to be preferred when the endotherm is available. Recurrences may take place even when radiotherapy has been applied by the most expert."

The disadvantages of the knife incision method are: the danger of implantation of viable cells; hemorrhage; and the possible transmission through the circulation of cancer cells into distant parts. The cosmetic results, also, cannot approach those of desiccation. According to Bloodgood, incomplete excision with the knife is more dangerous than a failure from other methods. For that reason electrothermic surgery has come to the front, because it insures against the spread of the growth by destroying it *in situ* and by thrombosing the blood supply, thereby preventing extensive hemorrhage.

Squamous Cell Neoplasms

Squamous cell neoplasms are relatively more common in men than in women during the cancer age, and may occur anywhere on the surface of the body and the mucocutaneous regions. The commonest site is at the border of the lower lip, with a relatively lesser distribution on the tongue and mouth, the face, ears, scalp, extremities, trunk, scrotum and penis.

The two principal varieties of squamous cell tumors are the papillary and the deeply infiltrating, ulcerative type. The papillary type is distinguished by its early ulcerative and nodulated appearance, with rolling, indurated and irregular edges. The infiltrating variety differs from the nodular in that there is no early ulceration or external nodules, but it shows an abraded surface with jagged edges and is deeply indurated. The latter is the more severe neoplasm to handle.

An important differential and prognostic point between squamous and basal cell cancers is the ability of the former to produce metastases. Since the growth of these cancers is more rapid, it is a valuable diagnostic point when the tumor is situated in a region suitable for either type. Moreover, the early metastasis of the squamous cell cancer is not only a danger to be remembered, but is also a guiding point in the therapy directed towards its eradication.

Morton, in summarizing the treatment of squamous cell cancer, justly complains that, "the choice of treatment has been for several years a battle ground for surgeons and radiotherapists, instead of a field of cooperation. This is an unfortunate situation, because each group must have something of value that is needed in the war against cancers of this kind. Even when gathered together in a symposium, the antagonism is manifest, though the opinions are toned down." The combination of intelligent cooperation between both groups toward the eradication of the common enemy should be the measure sought. Each has a potent agent that alone may not relieve, but in combination may destroy the fast-growing neoplasm.

The problem for the radiotherapist is to strike an ideal balance that will kill the local growth and its implants, and at the same time stimulate the general resistance, or at least not reduce it. The difficulty in this program is great, for no two growths are ever situated in exactly the same place, nor is the malignant cell nor the soil about it in the same mood of physiologic receptivity to the energy introduced. The factor of screening and voltage is also still an unsettled question.

We are in complete accord with Pfahler and Clark, who advocate combining the forces of electrocoagulation of the primary lesion and external radiation by roentgen rays. In a recent paper Clark spoke strongly for fractional high voltage radiation in preference to the massive dose method in malignancies. This may be an early index to the inutility of the massive dose method recently heralded from abroad. Our results with the fractional method of radiation have given us a greater prospect for satisfaction than with other technics.

Electrocoagulation

Since deeper destruction of neoplastic growths can be as readily accomplished as that of the more superficial types, the choice of technic unhesitatingly falls upon the electrocoagulation method, for it will be recalled that deeper heat generation takes place by that method than by desiccation. The malignant mass becomes coagulated—cooked, as it were; the electric current can be directed and regulated to any depth or intensity; hence the electric point or knife is under the most delicate control. In addition to coagulation, the blood and lymph channels are sealed. The heat penetrates beyond the area totally destroyed and devitalizes any potential cancer cell that has not been reached directly with the electrodes. Healthy tissue is not impaired or devitalized, for it has been proven that heat is less lethal to normal than to cancer tissue. Thus, by destroying and removing the primary growth by the curette and electrocoagulation, the danger zone of possible metastases is removed. Radiation by roentgen rays over the lymph glands already involved may produce sufficient damage to the cell to allow a safer removal by surgery of the glands. Thus cooperation, wherever possible, between the surgeon and the radiologist will offer the more promising chance for better results.

Anesthesia

In the more advanced accessible malignancies, such as epitheliomas of the lip and body, or cancer of the tongue or tonsils, or nasopharynx or larynx, coagulation offers the best results where complete eradication is desired. The procedure is the same as in any other major operation. The patient is prepared in the usual manner and the same preoperative attention is given, with the addition, however, of two hypodermic injections of hyoscine and morphine (1/100 and 1/4 gr. respectively), 1½ and ¾ hours prior to the operation. By so doing the general anesthesia is reduced to a minimum and the patient is placed in a better postoperative state, as awakening does not take place until hours later.

Ether or chloroform may be used. If the former is the anesthetic of choice, the patient is properly anesthetized, either in a room adjacent to the operating room or the ether is completely removed from the room if the anesthetic is given in the operating room. This is an important precaution because of the inflammability of the ether and the possibility of careless, accidental or necessary fulguration or sparking that may take place during the operation. Fulguration is frequently a necessary resort when an opened blood-vessel or bleeder is to be stopped. Its action is specific. Since chloroform is noninflammable it is the preferred choice, especially in electrothermic surgery in and about the mouth. Chloroform inhalation has been used by the writer on many occasions, without any untoward results. Important blood vessels, such as the tonsillar, lingual or external carotid arteries, should be tied off before coagulation takes place in the vicinity of the tongue or nasopharynx, so as to prevent secondary hemorrhage, a condition which may occur between the tenth and twenty-second day following the operation.

Technic

Two terminals are employed to include the true diathermy current. The indifferent electrode, made out of pliable, lead-tin metal, in size about 8x10 inches, is placed in complete contact with the skin on the back of the patient. Wetting the electrode or wrapping it in a wet cloth, according to the European schools, is unnecessary. A foot switch to control the current should be in contact with the operator's foot throughout the operation. The spark gap is advanced to a certain point, according to a predetermined spark obtained by test before the operation, or experience will guide the operator as to the intensity of the current by the coagulation that takes place under the needle-like or active electrode.

Peripheral walling off of the neoplasm is always attempted when possible, and this is performed on the same principle as the wheal formation in local anesthesia. The technic, of course, differs in that the pointed electrode is inserted into the edge of the growth and the foot pressed on the foot-switch. Gradual coagulation follows within a few seconds and the electrode is kept in contact until bubbling or evaporation takes place. The foot switch is then released and the electrode is removed and inserted in the same manner in a spot adjacent to the already coagulated section.

After the peripheral walling off, the same process is continued centripitally until the entire mass is coagulated. Removal of the coagulated neoplasm is then accomplished by curetting the destroyed growth with a dull, metal curette. Bleeding, if it occurs during the operation, can be promptly stopped by fulgurating or sparking the spot with the same electrode. Postoperative

attention differs in no way from that in any other operation.

Summary

The advantages of surgical diathermy may therefore be summarized as follows:

1.—The entire growth can be destroyed *in situ*.

2.—Conversion into and convection of the heat, by the current, to a depth in the tissue beyond that actually treated, thus assuring the destruction of any malignant cells which have been lying beyond the area which actually appears to have been involved.

3.—The practical elimination of either primary or secondary hemorrhage, as the blood-vessels are thrombosed beyond the area of destruction.

4.—Insurance against the spread of metastatic elements through either the blood or lymph channels.

5.—The minimum formation of contractile connective tissue—little scarring and good cosmetic effect.

6.—Alleviation of pain, because the nerve endings are sealed.

7.—Practically no surgical shock.

8.—Accuracy of dosage, because the current is under absolute control of the operator.

9.—The sterilization of the wound, because of the heat created within the operated field, incidental to treatment.

10.—Familiarity with the technic is essential. Given an exact diagnosis and proper establishment of therapeutic indications, surgical diathermy will prove a reliable and effective addition to our armamentarium.

30 North Michigan Avenue.

Discussion

Dr. Gustav Kolischer.—I fully agree with Dr. Kobak's exhortation for a simplification of our nomenclature and would like to add a plea for some exactness in using technical terms. You will, for instance, quite frequently hear and read about monopolar currents. That is a contradiction in adjecto. The essential in the conception of an electric current is the transportation by electrons or ions of electricity from one pole to the other.

The expression Oudin or D'Arsonval current and diathermic current are so often used indiscriminately and some authors seem to consider them as interchangeable terms.

The facts are these. In none of the modern diathermy apparatus is an Oudin resonator used, and the D'Arsonval current with its high voltage and relatively low amperage and its great loss of energy is discarded in favor of a current of low tension and high intensity as produced by the modern diathermic models.

In many quarters there seem to be also some indefinite ideas as to the reason for employing high frequency currents for diathermic purposes. We use these currents because they enable us to produce any desired degree of heat within the tissues. On account of the rapid reversion of the current all undesirable physiologic by-effects, as pain, electrolysis and irritation of susceptible structures are avoided.

As to the choice of the active electrodes to be used, there may be some good cause for a difference of opinion. It is true enough that a needle-shaped electrode may be sunk into the tumor to any desirable depth; at the same time it may be argued that, after a certain amount of coagulation is accomplished, a hollow space around the needle is formed, leading to sparking which, from certain view-points, is undesirable.

A very rapid and thorough coagulation is always carried through if the location and formation of the tumor permit the application of two active electrodes of the same size in an opposite direction.

A great advantage of diathermic coagulation lies in the fact that it is the most favorable precursor to radiotherapy.

A new avenue of thought for the direction of cancer therapy was opened by the discovery of the socalled diathermic zone produced around the necrosed area. This zone contains any amount of highly vivified cells whose increased vitalistic function may have something to do with the production of defensive and protective ferments whose action may lead to a chemotherapeutic influence on malignancy.

A. J. Pacini.—Like yourselves, I have greatly enjoyed Doctor Kobak's presentation of the interesting subject of surgical diathermy. Its fascinating history, its unfolding in consequence of the efforts invested in its study, its possibilities, all were lucidly expounded with considerable profit to all.

A thought which occurs to me at this moment has to do with the self-imposed limits created around a theme as the result of a strict adherence to definition. We have been speaking of diathermy for a number of years, implying by the term an action of through-heating as distinguished from the more or less superficial heating generated by radiant heat and light sources.

There can be no doubt that a prominent and desirable effect of high frequency currents, selected properly as to wavelength, is the temperature increase effected in the tissues which are interposed in the path of the current. Under proper conditions of intensification, the temperature rise may be sudden and superficial, or slower and deeper, and in both instances, always sufficient to bring about a rapid dehydration or coagulation of the protein structures with which the energy comes into contact. Thus, the most obvious effect is the thermic destruction of the tissues—a mechanism which underlies the theme of surgical diathermy. But I am inclined to think that there are probably other effects accruing from the passage of high frequency currents through the tissues in addition to the more glaring and superficially o b v i o u s destructive changes; effects which are little understood, but, I feel certain, are instrumental in adding to the already high merit of this form of surgical attack.

A research group in St. Louis has recently begun the laboratory and clinical study of the effects of diathermy in the treatment of malignant growths. As a biophysical advisor to that group, I had occasion to survey the findings which revealed this interesting fact; that when the diathermy current passed into the tissues used as experimental material, the amount of heat developed by the current was not sufficient to account for the total amount of current introduced. In fact, the discrepancy was much beyond the error that might be introduced in the attempted measure of the current and heat. Something like forty percent of the incident energy could not be accounted for on the basis of heat production; and since, according to the thermodynamic principle that energy cannot be lost, it follows that approximately forty percent of the high frequency current used as surgical diathermy was not converted into heat but into something else. Of course, the "something else" points definitely to chemical reactivity, just as ultraviolet rays falling upon a skin surface do not expend their entire energy in degrading into heat, but occasion instead many profound chemical alterations.

It has long been thought that something akin to cellular sensitivity existed between high frequency currents and tissue cells, and this rather exact experiment, many times confirmed, points the way to an understanding of the problem. This suggests a point of practical value to the student of surgical diathermy; that with proper refinement of method, probably along the lines of treating at lower current intensities for a longer time, the existing difference in the thermal sensitivity of cells can be better realized with obvious benefit to the possibilities of the method.

What I wish to convey has many counterparts in all walks of science: fractional distillation in chemistry, where refined temperature control will permit the separation of several liquids whose boiling points are very close together; fractional destruction of the immunologic units in sera, as in the various complement fixation tests; fractional destruction of bacteria mixtures, taking advantage of the different thermal death points of each species of organism. In all of these reactions, crude and crass elevations of temperature will defeat the objective attained by judiciously graded thermal differentiations.

So it seems that surgical diathermy implies more than simply heating through to the point of undifferentiated tissue destruction. Its already charming possibilities become still more alluring in the light of newer knowledge—that high frequency currents, in all probability, exert another action besides that of heating; and that by an intelligent application of this energy the naturally existing radio-sensitivity pertinent to all living cells, normal and abnormal, and apparently characteristic for each different type of cell, can be exaggerated so as to achieve more and more an approach to selective destruction of neoplastic invasion.

May I register my deep thanks for the privilege accorded me to share in the transactions of a delightful evening of entertainment and scientific profit.

Dr. Frank J. Novak, Jr.—Confusion of terms is a refuge for those who speak with more enthusiasm than sense.

For anesthesia it is better to infiltrate the field of operation with one of the local anesthetics, as procaine, and then use a little chloroform, if necessary, rather than ether. This will diminish the danger from sparks.

In most of the cases of malignant neoplasms, the pain is markedly relieved by electrothermic surgery, even if no cure results. This relief is an important matter and should not be despised.

In otolaryngological surgery it is possible to coagulate tumors *completely* without danger. This has been proved by experiments upon animals.

Dr. Carl A. Zell.—Aniline dyes are well known to have decided effects upon certain types of malignant cells. Why not combine diathermy with the dyes? In this manner we might be able to achieve something very helpful to the patients.

Dr. Edmund D. Levisohn.—After listening to the talk of Dr. Kobak and the discussion of Dr. Kolischer, Pacini and other speakers, I feel that there is one thought that everyone seems to overlook when speaking about diathermy and its uses.

That thought is *tissue resistance* and its relation to the amount of energy capable of being passed through it. In giving medical diathermy treatments we find that no two patients can tolerate the same amount of current and that at the present time we guide ourselves by what we term the "patient's tolerance."

I have repeatedly tried to determine, by the application of thermometers strapped to the part treated, to maintain the tissues between the electrodes at a certain temperature which I know will produce the best results and to a certain extent find that I can rely more upon this method for uniformity of action than upon questioning the patient regarding tolerance.

Tissue resistance and ohmage, in electricity, are to my mind synonymous; yet the latter can be accurately gauged where the former can not.

I feel that following up this thought will enable us to understand why, in some cases of coagulation of cancer masses, the result extends into the surrounding area and destroys known cancer cells; whereas in others, under the same technic and circumstances, nothing seems to be affected but the malignant mass, the surrounding tissues still containing cancer cells capable of proliferation and further involvement.

Closing by Dr. Kobak.—Infiltration anesthesia is useful in basal cell tumors only. General anesthesia is better in metastatic cases, and probably in all. We use ether in all operative cases. Our conclusions are based upon experience and are our own.

Tonsils may be *enucleated* by diathermy. We use no infiltration in these cases, but a *topical* application of a 10-percent solution of cocaine. The diathermy gives us a styptic effect and a smooth scar.

No one can expect to buy a piano and, the next day, be able to play like Paderewski. We must learn physical therapy technic by long study and practice. Too many half-baked enthusiasts without training are engaged in this work. The medical schools are now beginning to teach physical therapy and conditions are improving.

Blastomycosis About the Anus

By CHARLES J. DRUECK, M.D., Chicago
Professor of Rectal Diseases, Post Graduate Hospital and Medical School

BLASTOMYCOSIS is a chronic, infectious disease of the skin due to a yeast fungus, the Blastomyces, characterized by warty patches of various sizes, with a well-defined, raised, violaceous border in which are numerous minute abscesses. In the case here reported the whole perineum and perianal region was involved (Fig. 1).

Etiology and Pathology

Blastomycosis occurs more frequently in males, in the proportion of three men to one woman. One-half of the cases are over forty years of age, although Kessler reported a case in a child eight months old.

The direct cause is the Blastomyces, a yeast fungus. In some cases traumatism seems to have preceded the infection and Hartzell* believes it is altogether likely that a solution of continuity of the skin, either traumatic or inflammatory, is necessary to permit entrance of the fungus, except in those cases in which infection of the skin follows systemic infection.

Symptoms

The affection begins with small papules or pustules which crust over. These patches enlarge with the addition of new pustules about the periphery of each elevated lesion. The raised, violet-colored border is studded with minute yellow abscesses in the pure culture. The patches often are dry and covered with crusts, thus resembling groups of warts, and beneath these crusts is a moist papillomatous surface. This condition closely resembles the patches of verrucose tuberculosis of the skin. A superficial ulceration goes on in the patches which may slowly

*Hartzell: Diseases of the Skin (Lippincott).

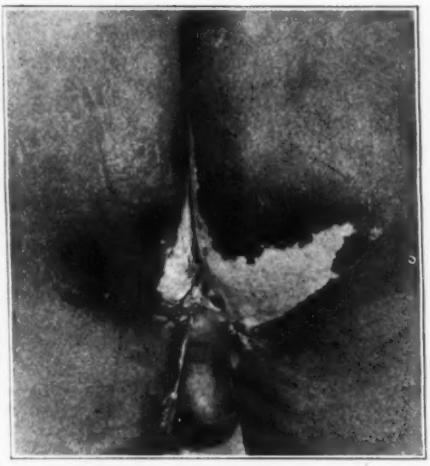

Fig. 1. Blastomycosis about the anus

spread, or may heal spontaneously, leaving uneven scars.

The extent of the disease varies considerably. A simple patch may exist, although usually there are several, and occasionally areas may be found scattered about the body. The patients' health as a rule is unimpaired except when the disease is the sequel of a systemic infection. The course of the malady is slow and irregular.

Diagnosis

Blastomycosis is most likely to be mistaken for verrucose tuberculosis of the skin and the resemblance between the two is frequently so close that a differential diagnosis from the clinical symptoms alone may be impossible, in which instance the presence of the blastomycetes in the pus and tissues will be necessary to establish the nature of the eruption.

Lupus vulgaris may be thought of, but the characteristic violaceous border containing miliary abscesses, in the pus of which are found the blastomycetes, will differentiate these two.

Prognosis

In cases of moderate extent a cure may be expected, but in systemic blastomycosis a fatal termination is the rule.

Treatment

If but a few small patches exist, these may be excised, the incisions going wide of the borders of the diseased area. If the patches are larger or so situated that they cannot be excised, thorough curettement, followed by the application of tincture of iodine, should be employed, together with the internal administration of large doses of potassium iodide. This treatment produces marked improvement at first, but rarely cures by the use of this drug alone, and a recrudescence occurs on discontinuing the exhibition of the drug. In these instances, radium or the x-ray, used in conjunction with the iodide treatment, will prove of much benefit.

Case Report

Patient was perfectly well up to about eight years ago, when he first noticed a small nodule in the left side of scrotum which caused considerable itching. He used a salve and various other remedies without effect until about nine months later, when by gradual growth it had reached a size approximately as large as the end of the thumb. It then broke open, allowing the escape of whitish pus. The ulcer enlarged slightly until it was about the size of a silver quarter. After reaching that size it was practically stationary for about three years. He then consulted a negro doctor, who applied three kinds of acid, over a period of about six weeks, to the ulcer and the skin about the ulcer. Large, black blisters would form, crust over and ulcerate. Some acid was accidentally dropped on the lower abdomen.

The original ulcer seemed to be stirred into activity by this treatment, and during the last four years has been gradually extending to its present size. There has been considerable healing of earlier-involved portions, with scar formation, as the lesion has progressed.

The patient was not suffering much and the lesions seemed in fair condition up to about six weeks ago, when someone sold him salve composed of axle grease, olive oil, etc., which was supposed to be a sure cure for cancer and other skin conditions. He used three boxes of it, and since then has been suffering considerably, as it seemed to make the lesions raw, and they are now quite painful.

At this time lesions are present on the lower abdomen, upper portion and inner surface of thighs, scrotum and penis, perineum and about the anus and buttocks. The general health is very good; no cough, no headache, no vomiting, no dyspnea, no swelling of the legs, except on long standing.

Physical Examination: Patient is a well-nourished negro, male, apparently in good general health; temperature, pulse and res-

piration quite normal; walks with a slight evidence of pain or discomfort; is rational and able to furnish a fair history.

Skin: There is an extensive involvement of the skin of the lower abdomen and other parts mentioned in a granulomatous, scarring process, apparently receding about the genitals and pubic region, with the formation of scars, and progressive about the borders, with a large amount of granulation. The upper border is just beneath the umbilicus; it extends slightly onto the anterior and medial surfaces of the thighs, involves the anal cleft and extends outward onto the right buttock. Almost all of the skin in this area shows some signs of involvement.

The active, granulomatous lesions have an abrupt margin with an elevation of about ¼ inch. The surface is very irregular, though quite level, the irregularity being due to small depressions between the lobules of granulation tissue. In many of these depressions there are yellowish purulent collections which can be expressed. The granulations bleed easily. Very few good, miliary abscesses are seen in the abrupt margin. The scarring in the center is quite firm. In general, it has a pinkish color and is smooth. The scrotum and penis are involved in the scarring with a few active areas.

The scrotum is shrunken and firm and no distinct testicles can be felt, but patient recognizes their location in the scrotum. The penis is deformed. There are small, depressed scars, such as might result from burns by drops of acid. The scars in places merge gradually into the active lesions, while in other places the change is abrupt. The scars are quite firm. In places miliary abscesses are seen in the scar. On the buttocks and posterior surfaces of the legs are dark lines forming a network. On the buttock they are quite firm. Lower on the legs they are apparently veins and not firm. There is a small, verrucous lesion on tip of the thumb, also.

The Present Status of Endocrine Therapy

By H. J. ACHARD, M.D., Glendale, California
Managing Editor, *The Endocrine Survey*

ENDOCRINE therapy is designated by many physicians as "the newest thing out," and as a development in therapeutics possessing immense possibilities for good, and one that has come to stay. Others call it a passing fad, and still others look upon it as the deliberate production of a "vicious commercial propaganda" which has been stimulated and maintained through entirely selfish motives, namely, the desire for gain. If the "wicked commercial interests" could be brought to discontinue their nefarious practices, it is said, endocrine therapeutics would soon be forgotten. There are a few enthusiastic extremists who assert that endocrine therapy is the only worth-while form of therapeutics and that everything actually can be treated successfully in that manner. Another instance of many minds, many opinions.

In connection with endocrine therapy, as in every other form of treatment, a calm, rational investigation of the problem is most likely to lead to acceptable results and, here as elsewhere, there is need of a conservative progressivism. Thinking in terms of endocrine function and dysfunction opens up a vista which, to be sure, has not only its possibilities, but also its limitations. To run off at a tangent and to view every deviation from health as an endocrine problem is as wrong as it is to declare every single ailment as remediable by intestinal antisepsis, by immunization, by the correction of pyorrhea, by the removal of the appendix, the tonsils, the ovaries, etc., etc. It must be admitted that therapeutic thought has gone through some weird phases and that probably it will go through some more. However, it is equally certain that endocrine therapy shares the fate of many perfectly rational and intrinsically inoffensive, but rather meritorious, methods of treatment in being antagonized and ridiculed by those who are afraid to think along lines that lead out of their own accustomed ruts.

It is not claimed for endocrine therapy that all you have to do is to administer a uni- or pluriglandular preparation and, presto, the patient is well. A remedy of such easy application does not exist. Not even quinine, arsphenamine, or other reputed specifics work with such absolute certainty. There always are toxic foci, which irritate the organism because of the constant elaboration of toxins, to be found and eradicated. The colon commonly contains putrefactive material, which makes it a cesspool

of unmeasured potentiality for harm. Habits of eating, of working, of resting, of thinking, may have to be corrected. In short, the patient's whole mode of living may have to be regulated.

If it is asserted that such a regulation alone is sufficient to break up functional disturbances, it may be objected that it has many times just failed to give complete results and that these did not materialize until a suitable endocrine therapy was added to the other measures.

In rickets, in backwardness of children, in delayed puberty, endocrine agencies are frequently at fault. Rickets is neither an exclusively avitaminous nor a solely endocrine affection. Its etiology is mixed, and it calls for a variety of therapeutic means. Retarded development in small children and in adolescents is many times the result of faulty heredity. Nevertheless, it is well not to be content with that explanation. It is quite proper to try to overcome the results of faulty heredity and, in turn, to make every effort to train the young people of today into good ancestors, so that they may transmit only favorable hereditary dominants.

The Bugbear of Empiric Therapy

As we now come to the field of endocrine therapy, it may be admitted at the outset that this is largely empirical and that only a relatively small portion bears the stamp of approval by scientific authority. Such a reproach can not disturb one's equanimity if it is remembered that even those forms of endocrine therapy that have been sanctioned by authority were originally empirical. It is not so many years ago that myxedema was treated with thyroid substance on purely empirical grounds, and the patients benefited just as much then, while being treated empirically, as they do now under scientific thyroid therapy. The possibility of alleviating the pancreatic disability in diabetes mellitus was recognized years before insulin was isolated, thus proving the correctness of the empirical measure.

Naturally, it is pleasing to those who have devoted years of study to the practical investigation of endocrine faults and of the possibilities for their relief, to have their faith vindicated by the positive results of the animal experiment. But, in those cases in which the animal experiment does not afford that proof, it is very often not the clinical observation but the animal experiment that requires modification. You can prove almost anything with the animal experiment, and it is quite possible for the experienced laboratory worker to establish a thesis and then prove it by animal experiments.

Moreover, physiology is somewhat premature in its demands that a definite etiologic connection should be established before etiologic therapy may be sanctioned. These conditions have not been complied with in any other condition, and it would be absurd to enforce them here. At a recent discussion of the uses and abuses of endocrine therapy, before the Section of Medicine, British Medical Association (*Brit. Med. Jour.* and *Lancet*, both for Dec. 5, 1925), Dr. Vines said, very truly:

"... We are, I think, discussing a science which is undeveloped, and we are attempting to discuss it as though it were fully matured. Let us suppose that this meeting is being held thirty years ago, and that the subject is the possibility of aerial flight. There would be a small band of enthusiasts who would insist that flight in machines heavier than air is a possibility; there would be a large band of destructive critics who would dismiss the matter as a fantastic absurdity. The parallel, I leave to you; destructive criticism is not going to help us solve the problems of endocrinology, and though enthusiasms equally have their dangers, they tend to progress rather than the complacency of inaction."

Vines added that the paper by Dr. Langdon Brown was an account largely of the experiences of the writer in the clinical use of endocrine substance; that by Professor Vincent (who had criticized all endocrine therapy except thyroid as unscientific) suggested rather the statement of a preconceived dogma, "unalterable by the progress of the investigations of others and supported by recorded experiences of the writer."

Conservatism is an excellent thing, if practised in moderation. But, conservatism may become reactionary. For instance, at the meeting just referred to, the position of the physiologist, Prof. Swale Vincent, was not conservative, it was reactionary. The truly conservative attitude was taken by the clinical protagonists of the therapy, Dr. W. Langdon Brown and Dr. H. W. C. Vines. These men do not claim that endocrine remedies can heal all the ills that the flesh is heir to, but they do assert that they have the right to investigate.

The opprobrious use of the term "empirical" has been overworked to such an extent as to make it absurd. Is not all treatment empirical? Can one be absolutely certain in the case of insulin, thyroxin, epinephrin, quinine, arsphenamine, radium, x-ray, or ultraviolet ray, that the expected results

will materialize? How often does the most scientific physician make a solemn face and say to his patient, "If this medicine does not do the work, we shall try so-and-so"? Is there no empiricism in "trying" so-and-so? Why single out the uncertainties attaching to one form of treatment and forget them in others? It arouses some suspicion of preconceived ideas—of a determination to judge before the evidence has been heard and fairly evaluated.

It is not the province of the laboratory worker to teach the physician how to practise medicine. Since he, the laboratory worker, has no clinical experience, his attempts to lay down the law are uncalled for. To be sure, he is consulted in an advisory capacity but more for the purpose of explaining clinical observations than of dictating or prohibiting certain forms of treatment. The physiologist who presumes to deny that a certain remedy has therapeutic properties, merely because his animals did not respond to it and although clinicians are unanimous in reporting positive results, is making himself ridiculous.

Clinicians are blithely unconcerned about the terrible reproach of empiricism made against them by scientists. Clinicians confronted with urgent problems have at all times, not unnaturally, had recourse to empirical methods. No objection can be made to this, as was emphasized by W. Langdon Brown (1. c.):

"Empiricism," he says, "has often won therapeutic success which had to wait long for scientific explanation (such as quinine for malaria and mercury for syphilis), and which in some cases has not yet received it (such as salicylates for rheumatism and colchicum for gout). The empirical method has always been suspect by the laboratory, although it is a procedure by trial and error just as the experimental method is; I think I may add, fairly suspect, when one remembers that cod-liver oil was used for many years to the scorn of the experimentalist—until vitamines were discovered, when he scoffed no more.

"On this very subject of endocrine glands the pioneer observations were made at the bedside. Gull and Ord discovered the functions of the thyroid when the laboratory had made no more helpful suggestion than that it was merely to improve the contour of the neck. Addison was the first to point to the function of the adrenals; while the rôle of the pituitary was recognized clinically from the symptoms of acromegaly and Fröhlich's syndrome. We have no need to apologize for using the empirical method, but we have need to employ it critically, realizing the fallacies to which lack of control exposes us.

"Of recent years, two biochemical methods have been used to confirm the effects of an extract—the study of the basal metabolic rate and of the blood-sugar curve. Of more limited application is the estimation of the calcium content of the blood. But I look forward to the formulation of other such tests which will prove valuable aids to our treatment and check on our results."

Dr. Wm. Engelbach, of St. Louis (*Endocrinology*, Sept.-Nov., 1923, vii, p. 686), remarked in a discussion before the Association for the Study of the Internal Secretions:

"We are frequently told that organotherapy is more or less empirical and given in most cases without result. I take it for granted that reference is made to results observed by the physiologist upon animals in the laboratory. But even in clinical circles there are great differences of opinions and contention with regard to the effects of ductless-gland therapy. I think that results depend greatly upon a number of factors that we have not quite appreciated.

"In the first place, in addition to the *questionable potency* of the various products used, there is no doubt that we are making diagnoses entirely too late in a great many ductless-gland disorders to obtain good results. We begin to treat cases six to ten years after a gland has been out of function and expect results from the administration of a known hormone. Then, second, I feel sure from our own personal experience that our diagnoses have been incomplete. I know we have treated pluriglandular diseases for uniglandular disorders; for instance, treating a thyro-pituitary syndrome for a simple hypothyroidism, giving thyroid instead of thyro-pituitary substitution therapy. And, third, I believe that we are not treating subjects at the most opportune age. There are certain ages in glandular disorders at which time, if treatment is instituted, favorable reactions are produced; whereas, if the same patient or the same disorder is treated at another age, the treatment is of little avail. For instance, hypogonadism, when treated just before the stage of maturity, offers very much better results than when treated at the age of twenty-five."

Uncertainties of Experimental Results

Dr. Engelbach states further:

"There are many definite positive observations in the clinical study of the human endocrine organs that I believe the laboratory cannot duplicate in animal experimentations. They are making experiments on a group of animals concerning whose ductless-gland function comparatively little is known. They are not sure that they are dealing with hyperpituitarism or hypergonadism in certain animals at a certain age, which estimation I believe can be made in the human being by the clinician. Again, there are some measurable results in the human subjects, which cannot ever be estimated in animals; for instance, the change in fatty tissues, as the removal of the girdle adiposity with pituitrin. The effects upon the mental, menstrual, and osseous development and function are other striking examples. A careful roentgen estimation of osseous devel-

opment at various ages proves that all these glands have decided influence upon the skeletal growth. The latter is demonstrated by the effect of ductless-gland treatment upon the appearance of the nuclei of certain bones and the fusion of epiphyses in positive endocrine disorders. I believe that these clinical observations are just as scientific, exact, and convincing as the experiments of the physiologist. What we need is more discriminating, discerning clinical studies along the line of the positive therapeutic effects of these interesting disorders of the internal secretions."

In addition to the points raised by Dr. Engelbach, which depreciate the value of animal experiments, one might mention that in many experiments either the animals are healthy or nothing is known about their health except that they do not present any manifest signs of disease. Negative results after feeding endocrine substances to healthy animals are not surprising and would usually be observed in healthy human beings under like conditions. The selective assimilation of which the animal organism is capable would cause endocrine substances to be disintegrated by the healthy organism without any specific action. Exceptions are seen when the active principles are administered. Insulin, epinephrin, liquor hypophysis, thyroxin, will exert their pharmacodynamic effects in the healthy as well as in the diseased organism. The glandular substances will not do so unless given in large amounts, in which case, however, the possible protein effect must not be lost sight of.

If an attempt is made to produce certain endocrine diseases in animals, in order to investigate the possibilities of substitution therapy, the difficulties are enormous, and in very many cases the resulting disease is one of surgical trauma rather than of endocrine defect. Moreover, in many diseases, the endocrine factor is not primary but secondary; yet, it is none the less amenable to alleviation by endocrine factors. This is not subject to proof by animal experiment. Nevertheless, it is a fact that has been established by clinical observation, controlled as carefully as clinical work can be controlled.

Mode of Administration

In considering practical endocrine therapy, the question naturally arises as to which mode of administration is to be preferred. Clinicians are so greatly under the sway of laboratory dictation that the subcutaneous, the intramuscular, and the intravenous methods have been accepted as the only ones theoretically correct. I deny this, feeling certain, on the basis of clinical observation, that oral administration of endocrines is not only feasible but of distinct service.

Speaking with Dr. Walter Timme:

". . . . The statement, that the only substance that we know of which has an effect upon human economy when given by mouth is thyroxin, . . . was once made at a medical meeting in which very many prominent physiologists were present, and a speaker at that time invited any one of them to take an ounce of adrenalin chloride (1:1000 solution) and swallow it then and there. If it had absolutely no effect there should be no reason for not taking it that way. None accepted the invitation. As a matter of fact, you do not need to experiment on animals or on any other human being than yourself. When you get a chance, take a little adrenalin by mouth and see if you get any effect on yourself, or take a little pituitary substance into a stomach which has no food in it, for two or three doses or for two or three days, and see whether it has any result upon yourself. You do not need to read a textbook; you do not need to go into a physiologic laboratory; you do not need to measure the blood-pressure or pulse-rate of the animal that has received it. There are certain things our instruments, good as they are, do not measure. There never was an instrument invented that took the place of brains, and so I say that if you think none of these substances is at all assimilable or produces any effect when given by mouth, please try it on yourself."

Administration by Mouth

The administration of endocrine substances by mouth is constantly made the subject of severe castigation. The possibility is denied by experimenters, regardless of the positive reports of acknowledged clinicians like Langdon Brown, George de Schweinitz, S. W. Bandler, Grove and Vines, and a host of others, not to speak of the leaders in endocrine thought, like Engelbach, Timme, Tierney, Sajous, Rosenburg, Lisser, Harrower, and many others. Some of these men preach parenteral endocrine therapy but practice oral administration, European clinicians are more honest in this respect. Levi, Pende, Marañón, Biedl, and Falta, to mention only a few representative ones, recognize the possibility and admit it freely. There are many clinicians and numerous practitioners of medicine (but, nevertheless, careful observers) who insist that the oral route is feasible in many circumstances. Typical effects have been reported from adrenal cortex given by mouth (Rowntree), from pituitary (de Schweinitz), from ovarian substance (Bandler, Oliver T. Osborne), and many others. The favorite reproach of *post hoc* reasoning might be met by that of preconceived dogmatic ratiocination and by *a priori* reasoning. It *may* happen that

experimenters have made up their minds in advance what they are going to prove by their experiments. One of the most noted research workers of the last generation declared in one journal article that the result of an experiment often depends, in a measure, upon the good-will of the experimenter.

If we wish to be highly critical and irreproachably scientific and withhold all remedial agents until their exact effects, possibilities, and limitations have been established in the animal experiment, what shall we say to our patients?—"Sorry, your trouble is so-and-so. It is assumed to have such-and-such a cause and to be amenable to this-and-that remedy. Unfortunately, Professor Negative has not yet proved its effects in animals that had been made artificially ill, something like your illness, and until he has approved of the remedy, it would be unscientific to cure you with it." The patient naturally will consign your scientific treatment to Jericho or an even hotter place and will promptly consult an osteopath, chiropractor, Christian Science healer, or some one equally pretentious but much more cheerful. And, after all, optimistic methods do help mere human patients, however impotent they may be in animals made sick in some artificial fashion.

Have the experiences of the past fifty years of critical study taught us so little that we cannot tell when a remedy is of benefit without its having been employed in the animal experiment? Do we subscribe to the astounding assertion made by one noted scientist that he looks with suspicion upon a therapeutic result that can not be duplicated in the animal experiment? If so, we had better give up Medicine and sell real estate in Florida.

Our patients consult us in order to procure relief. Supposing some of the relief were psychic and could not be explained in terms of so many grains of drug to so many kilograms of dog? What if we cannot explain every step in the process? Can we explain every phase of digestion, of assimilation, of elimination? Do we actually know where and how red blood-cells are produced and what becomes of those that have died? Do we know these things about the white blood-cells, about tissue cells. If we wish to be consistent, we must refuse to treat all sick people until we know all these things.

Does it appear as though I decry and condemn scientific research? I plead, "Not guilty." What I do object to is the uncritical criticism that is thrown at the conscientious physician who honestly tries measures that appeal to him as rational, even though their scientific value is not established. I object to the intolerant autocratic attitude of theorists who presume to impose their orders upon practitioners. However, what I have said cannot be misconstrued by any fair-minded critic, least of all by an experienced clinician. As long as we have to deal with so many unknown factors as are present in sick people, so long we must consent to treat them empirically or not at all. Incidentally, our difficulties are increased and multiplied manifoldly, by the fact pointed out many years ago by Rokitansky, and more recently by Richard Cabot, that so many clinical diagnoses are not confirmed on autopsy.

Swale Vincent (*Brit. Med. Jour.*, Dec. 5, 1925, p. 1051) and others claim that endocrine therapy is limited to true substitution therapy. Vincent explains the effect of thyroxin and of insulin as being one of substitution; that of suprarenin and pituitrin as being pharmacodynamic.

Substitutive therapy would be all right if it could always substitute (often it is actually protein stimulation). But, however valuable thyroxin and insulin are (and their value is immense), there are grave doubts that they actually bring about a likeness of the normal functioning of the thyroid gland and of the Langerhans islands. In all probability, these two substances do not fully reproduce the physiologic function of the internal secretions concerned; probably these have other active principles in addition. If, then, we want to be keenly critical, we must doubt even the complete effectiveness of these well-established and meritorious substances. You see how overdrawn criticism carries us to absurd lengths.

Homostimulation

As a matter of fact, I believe that the homostimulative effect of many endocrine remedies is often of greater importance than the substitutive. This, to be sure, brings us into the domain of the specificity of tissues which is still strenuously denied. However, if so noted a scientist as Abderhalden can claim a far-reaching specificity, we may rest content to travel with him. Clinical observation proves that it is indeed possible to stimulate certain "lazy" tissues to renewed energy by homogeneous medication. I do not know to what extent it would be feasible to prove this by long-continued and numerous series of biochemic examinations. In the meanwhile, I suppose, the sick would have to be permitted to "gang their ain

gait"—to the chiropractor, the Christian Science healer, and others of that ilk.

I have no doubt in the world that ultimately the correctness of the views of empirics will be demonstrated and vindicated with surprisingly few modifications. These same empirics will in the meantime continue, as they have done these many centuries, to help their patients as well as they can, even if they sometimes have to resort to psychic means. After all, the patient wants to get well and does not care by what means—whether scientifically or empirically or psychically—just so he gets well and remains well.

Associated Therapy

Very naturally, endocrine therapy is not exhausted with the administration of glandular desiccations or solutions. It comprises also drugs that influence the functioning of the endocrine glands, biological preparations, like vaccines and serums, x-ray, radium, and other rays which stimulate or retard endocrine function—in short, all those agencies and factors that can modify, in either direction, the activity of endocrine organs.

In the employment of endocrine agents, one should not lose sight of the fact that these have a direct action only in those cases of manifest endocrine deficiency, in which a substitute effect may be postulated or a homostimulation provided. In endocrine excess, sedation may be brought about not only by opposing endocrine treatment, but also by other measures (sedatives, narcotics, some forms of hydrotherapy, electrotherapy, etc.) that cause a slowing of the increased function.

In other diseases, especially the infectious and the constitutional diseases, the effect of endocrine remedies is indirect but no less valuable. Thyroid, for instance, acts by improving metabolism; adrenal substance increases the blood-pressure, also the tonus of the mechanism governed by the vagus; spleen and parathyroid improve the mineral metabolism and promote the formation of antibodies, etc., etc.

Endocrine therapy has a proper place in the therapy of numerous diseases in which the endocrine factor in pathology is remote, That does not make the employment of endocrine therapy any less rational and, therefore, less scientific. Even though the endocrine implication may be indirect, it is real. If endocrine therapy can aid in re-establishing physiologic processes, it is proper. As a matter of fact, I am convinced that endocrine remedies have as important a place when used as adjuvants to causal therapeutic agents as they have in actual endocrine disease.

Pernicious Anemia

Reports of Five Fatal Cases

By A. E. HOFF, M.D., North Bend, Nebraska

THE descriptions of diseases in the textbooks are, and must be, a composite picture of a large number of individual cases, so that we study the features of the typical or ideal case—which is almost never seen in actual practice.

There should be a certain degree of interest and value in the study of actual cases of disease, even though nothing new in the way of diagnosis or treatment is suggested. The mere perusal of the findings as elicited by a careful examination frequently serves to refresh the memory or to call to mind some practical point in diagnosis which has been overlooked.

Although the five cases here reported all ended in death, they serve to illustrate the fact that the typical picture of any one disease is frequently complicated and obscured by the presence of another, so that much care and study are required to appreciate the relative value of the different signs and symptoms and assign each to its proper place in the clinical picture.

These cases are presented simply for study, in the hope that they may bring out some points which will be helpful to others in the diagnosis and management of similar cases.

Case No. 1. Primary Pernicious Anemia

First Entry: An American housewife of 39 was operated upon in this hospital eighteen years before her second admission.

Family History: A sister had had a hysterectomy (perhaps for cancer).

Physical Examination: No blood or urine examination is recorded. Partial hysterectomy was done. A pathological report showed fibromyomata of the uterus.

Second Entry: May 5, eighteen years later, she returned.

Family History Good: Her husband left her twenty years ago, after seventeen years of married life, during which time she had never been pregnant.

Social History: She had lost all her money and had no place to go after she left the hospital.

Personal History: Nineteen years ago and again eighteen years ago she had "nervous prostration." Both attacks were in the spring, confining her to bed for six weeks each time. She vomited green material; had alternate diarrhea and constipation, with pain in right upper quadrant, mostly cramping in character. She thought she was pale and slightly yellow. (The old surgical history does not mention any of these symptoms, but notes that the attacks followed mental strain which had lasted for five years. The second one was accompanied by almost continuous flowing for a few months just preceding her hysterectomy.)

For four years, beginning ten years ago, she had dyspnea and slight palpitation on exertion. Her appetite had never been very good. No nycturia since the onset of the present illness.

She had always had very excessive flowing at the catamenia and often passed large clots. This continued until she was operated upon. After her hysterectomy the flowing was very regular for two years and then stopped with no symptoms of the menopause. For three months her hair had been getting thin. Three years ago she weighed 158 pounds (her best weight). Her usual weight until four years ago was 148. Two years ago she weighed 112. She thought she had been losing since.

Present Illness: One morning, three and a half years ago, after feeling perfectly well on going to bed, she found on waking that she was too weak to stand. A few hours later she was able to walk, but was unable to use her hands, and had a very cold sensation in her right leg. This condition progressed until two and a half years ago, when she was unable to walk at all. She then gradually improved for two and a half months. Since then she had grown progressively worse. Her legs were very stiff as well as weak. For six months she had not walked at all and her arms had been practically helpless. Her muscles seemed to be tight and she had no control over them and had lost most of the sensations in the arms, feet and legs. For six months she had been unable to eat much and became nauseated at the smell of food. For two days she had had ringing in her left ear. At present she could hardly move. For four days her teeth had been loosening and coming out. She had noticed that she had been growing pale, but did not know for how long.

Physical Examination: Fairly developed and nourished, with flabby, fat, white skin. Mucosae very pale. Few remaining teeth very loose; pyorrhea. Tongue pale. Apex impulse of the heart not felt; percussion borders not recorded; action rapid; sounds of fair quality; P_2 accentuated; a loud, blowing, systolic murmur heard all over the precordia, loudest at the base; pulses and artery walls normal. Systolic blood pressure not recorded. Abdomen showed general tenderness. Liver dullness from fifth rib to costal margin; edge felt 3 cm. below. Genitals negative. Extremities: Moderate edema of both legs. Pelvic examination: Slight rectocele, cervix high. Pupils normal. Reflexes: Right knee-jerk sluggish, left not obtained. No clonus or Babinski's sign.

Temperature: Usually 98° to 100°F., until May 22, then rising sharply to 103.4° to 105.8°. *Pulse* 72 to 143. *Respiration* not remarkable until two days before death, then 17 to 36. *Urine*: Specific gravity 1010 to 1018; cloudy at one of three examinations; slight trace of albumin and leucocytes found at all examinations. Renal function 20 percent. *Blood*: Hemoglobin 24 to 52 percent (Sahli); leucocytes 7,000—2,800—9,000; red cells, 720,000—1,688,000; polymorphonuclears, 71 to 88 percent; reticulated reds, 0.5 percent up to 1.6 percent; moderate poikilocytosis, macrocytosis and microcytosis; a few polychromatophilic cells at one of four examinations; achromia at one; marked polychromatophilia at another; platelets markedly decreased at all examinations.

She was slightly confused at times and was very uncomfortable. May 15, a surgical transfusion was done (500 cc., by Vincent tubes). The surgeon was forced to make an extensive incision to find a suitable vein. The patient was very noisy and confused afterwards. The next day she tore the dressing from her arm. May 20 she was much better mentally, and felt quite well. The blood count was increased a little. May 24 she died.

Case No. 2. Pernicious Anemia and Chronic Nephritis

An unmarried American housekeeper of 44 entered February 23, 1915.

Family History: Her father died of cancer of the stomach; her mother of chronic stomach and intestinal trouble. Two brothers and two sisters had had "dyspepsia."

Personal History: As a child she had a severe attack of diphtheria at 9; also measles, mumps, whooping-cough, possible scarlet fever, frequent sore throats, colds and catarrh. At 29 she had a "nervous breakdown" while studying and teaching at the same time. She did nothing for six years, during which time she was in a hospital several times for curettage, had an operation on the muscles of the eyes, and general treatment at a sanitarium, where "soreness all over" was relieved. At 32 her right ovary was removed in a hospital. Her convalescence lasted three years. She began work as a housekeeper, but broke down in a month. Since then she had been governess and housekeeper, with one break-down; none for the past four years. For years she had had "indigestion"—gas, sour stomach, constipation and gastric tenderness. For a year this had been worse. During eight months she had menstruated only twice.

Present Illness: For a year she had had sore tongue at intervals. In September, 1910, she began to have nausea and vomiting without relation to meals, constipation, anorexia, gas in the stomach, and micturition once at night. The attacks became more and more frequent. Since January she had had dyspnea on exertion, with pain in the chest, and had grown rapidly worse, until now talking made her dyspneic. During the past week the attacks of nausea and vomiting had been much more frequent. For three days she had been in bed. For two days her bowels had not moved. She vomited once or twice on February 21 and twice on February 22. The chief complaint at entrance was dyspnea.

Physical Examination: A fairly well developed and nourished woman, 5 feet 6⅞ inches in height (weight 116¼ pounds March 1), sallow, nervous, slightly dyspneic, and complaining of chilliness.

The skin and mucosae were pale. The cervical lymph nodes were slightly enlarged. The *heart* showed no enlargement to percussion. The sounds were a little irregular, distant, rather poor in quality, heard with some difficulty because of muscle sounds. A very soft, blowing, systolic murmur was heard all over the precordia and to the posterior axillary line, loudest at the apex. P_2 equal to A_2. Left pulse greater than right. *Arteries* normal. *Lungs* negative. *Abdomen*: Slight general tenderness; slight rigidity in the right upper quadrant; the liver dullness extended from the sixth rib to 3 cm. below the costal margin, the edge was questionably palpable. There was an 8-inch surgical scar above the pubes. *Extremities*: Feet cool. Intermittent coarse tremor of both hands, especially the right. The pupils and reflexes were normal.

May 7 to 18: *Temperature*, 97.1° to 101.5°F.; *Pulse*, 99 to 126; *Respiration*, 17 to 31. *Systolic Blood Pressure*, 105. *Urine*: Normal amount until May 10, afterwards less than 4 ounces daily; specific gravity, 1004 to 1010; cloudy at six of eight examinations; alkaline at two; a slight trace of albumin at seven; leucocytes at six; red blood corpuscles at one. *Blood*: Hemoglobin, 20 to 65 percent; leucocytes, 2,500 to 15,500; polymorphonuclears, 58 to 82 percent; mast cells, 1.5 percent at two of ten examinations; 1 to 30 normoblasts at five of twelve examinations; 2 to 18 megaloblasts at seven of ten; platelets decreased at eleven of twelve. Reds, 600,000 to 2,700,000; some were very achromic, but most of them suggested a high color index; occasionally a very large polychromatic cell, sometimes stippled; rare oval "ring forms," stippled. Later examinations were essentially the same, with the addition of marked poikilocytosis at several examinations. *Stools* negative. Fundi, March 1, showed retinitis of the left eye; March 28, a few patches of exudate and small hemorrhages along the vessels in the retina of the left eye.

The patient was comfortable, but grew weaker. It was almost impossible for her to eat. She was given a diet, 1 dram (4.0 G.) of bismuth subnitrate, t.i.d., before meals; milk of magnesia and sodium bicarbonate as needed for gas; a Fowler's solution order; barbital-sodium, gr. v, with sodium bromide, gr. x, once or twice every night as required; a mixture of tincture of nux vomica, 2 drams, tincture of gentian compound, 1 dram, and water to make 4 ounces; Sig: A teaspoonful, t.i.d., before meals; and cascara sagrada in 3-grain tablets.

March 4 fruit was allowed. She slept a great deal; sometimes had to be roused several times to get her to finish a meal. By suggestion of the chief of service she was given sausages on account of her weak appetite, and ate six at once.

April 5 she was given 0.6 Gm. salvarsan, intramuscularly. She vomited immediately, and spent a very uncomfortable night. Five days later she was stronger. She complained of pain in the right lower chest, where there

were many fine moist rales with dullness. Her face became puffy in the mornings.

May 3 she began to have headache and slight coryza. The headache, chiefly frontal, became more severe. At midnight of May 5 she was found unconscious, relaxed, breathing 16 to the minute somewhat stertorously, with a little frothy saliva coming from the mouth. The pulse was 102, excellent in quality. After five hours she became conscious and complained of headache. The following noon she had a generalized clonic convulsion of short duration in which she bit her tongue. The pulse was 104, variable in force, the beats gaining in strength to a maximum after seven or eight, then dropping suddenly. Her face was more edematous. There was still slight induration in the buttock thirty days after the administration of salvarsan. The base of the right lung was still full of crackling inspiratory rales. The pupils were normal.

May 7 she was irrational and incontinent. She ate almost nothing and weakened perceptibly. Sometimes she lay with her arms held in the air as in catatonia.

May 9 a mass of fat and gluteal muscle showing some signs of necrosis was removed from the region of the injection of the salvarsan. There appeared to be an extension of semi-necrotic material to the lower sacral region, where for two days there had been a little reddening of the skin.

May 10 she was nearly comatose; May 11 less so, but complained of pain at the site of the operation. The wound was clean. She was put on constant seepage and given intravenous salt solution. May 12 there was a little more oozing from the wound. The excised specimen showed considerable fat necrosis and a little muscle necrosis. A small amount of arsenic was found in it. She was in danger of developing bed sores at many points. The pulse was excellent. The night before May 18 the wound began to discharge freely. Next morning it was found to be sloughing. That day the patient died.

Case No. 3. Pernicious Anemia and Dilatation of the Heart

An American slaughter-house foreman of 56 entered January 19, 1923, for relief of weakness a year and a half in duration.

Family History: His father and one son died of diabetes. An aunt died of tuberculosis. His wife had three or four miscarriages. Several children died in infancy.

Personal History: Whooping cough was the only disease he remembered in childhood. At 15 and again at 37 he had inflammatory rheumatism, the first attack lasting two months, the second a whole winter. As long as he could remember he had had attacks of "biliousness," formerly every two weeks, of late years rather infrequently. For two or three days before the attacks his skin and eyes became yellow and his urine very dark. The attacks began with dimness of vision, then severe pain over both eyes. In a few hours he vomited green material and the attack was over. He had a "cold-sore" removed from his lip seven years ago. One gland on the left side of the neck swelled occasionally. His bowels had always been constipated. He sometimes urinated once at night.

Habits: He took beer very moderately. Best weight 250 pounds, eight years ago; usual weight 230 to 240; weight a week ago 205.

Present Illness: Four years before admission there was gradual onset of pain in the lower back, fatigue, and a feeling of fullness and discomfort in the epigastrium. This last was constant and was always made worse by food. With it was marked jaundice. His bowels were constipated. These last symptoms lasted four months, during which time he did not work.

Finally, on account of increasing severity of the symptoms, he went to an osteopath. After treatment the pain and jaundice disappeared and he went back to work. The pain had never reappeared. He was then entirely well for a year except that he had a very sore tongue for three or four months.

Three years ago, following domestic trouble, he became very nervous and fretful and lost weight. The nervousness and also the domestic trouble had persisted more or less to the present time. He also began to have a feeling of weakness, bad for a year and a half. Fifteen months ago he began to have pain in midsternum, only after exertion or hard work. With this there was also pain in the left forearm from the elbow to the wrist. He was very weak, did not feel right, and he was told that he looked queer. He felt chilly easily and got out of breath on moderate exertion. After two months he recovered completely.

Eight months ago the symptoms returned, and with them jaundice. Again after two months he was well. Very soon after this he had another breakdown from which he quickly recovered. From six months ago to four months ago he was well and worked every day. Four months ago the present

attack began with jaundice, weakness, dyspnea and midsternal pain on exertion, palpitation and pounding in the ears. With this attack his fingers and toes were numb. For the past two weeks his appetite had been very poor and he vomited easily. For ten days he had been coughing and expectorating thick, yellow sputum.

Physical Examination: A well-nourished, white-haired man, looking exhausted. Scattered, tiny petechiae on the upper chest. Small, white, round scars on the anterior chest wall. Pigmented scars on the left leg and a purplish, depressed scar on the right leg. Skin and sclerae pale and yellow; the sclerae more yellow at the periphery and slightly injected. One petechia noted under the conjunctival surface of the lower lid. Slight pyorrhea. Tongue margins very smooth; papillae atrophied on margin; atrophied areas on under surface and a few petechiae. Moderate, discrete enlargement of the cervical and axillary glands.

Chest: Abnormally wide intercostal angle with depression above a wide, upturned xiphoid. Apex impulse of the *heart* not localized; sounds of rather poor quality; soft, blowing, systolic murmur all over precordia, loudest at apex and base. *Blood Pressure*: January 19, 108/35; January 29, 132/60; February 3, 90/45; February 16, 112/50. *Electrocardiogram* showed normal rhythm; rate 90; diphasic T_2. *Abdomen* negative, except for slight retraction in the epigastrium. *Pupils* normal. *Fundi*: Both showed pale, hazily-outlined, small hemorrhagic areas scattered throughout, some apparently absorbing, others darker and fresher. *Reflexes*: Kneejerks hyperactive, with clonic contractions. Poor position and motor sense in both legs and arms. Slight numbness of toes.

Temperature: 96.9° to 100.8°F., except for two periods of elevation, January 19, 102° and February 12 to 18, 98.1° to 106.5°F. *Pulse*: 71 to 160, rising with the rise of temperature. *Respiration*, 16 to 29. *Urine*: Specific gravity, 1015 to 1020; slight trace of albumin at one of two examinations; occasional leucocytes at both.

Blood: January 19, hemoglobin, 40 percent; leucocytes, 3,200; polymorphonuclears, 56 percent; red cells, 1,030,000 to 1,120,000; marked anisocytosis and poikilocytosis; many large red cells well filled with hemoglobin; considerable variation in staining; many microcytes; platelets very rare; reticulated cells 1.9 percent. Chart No. 1 shows results of subsequent blood examinations.

Chart No. 1

Date	Hemoglobin	Leucocytes	Red Cells	Reticulated Reds
Jan. 23	40%	2,200	1,500,000	1.7%
Jan. 27—Before*	40%	.....	920,000	2.0%
Jan. 27—After*	40%	.....	1,300,000	.....
Feb. 1	50%	4,400	1,320,000	0.3%
Feb. 7	60%	4,100	1,300,000	2.8%
Feb. 10—Before*	50%	6,400	1,350,000	.....
Feb. 10—After*	60%	3,500	1,900,000	1.1%
Feb. 17	.....	2,500	.....	.....

Serum dilution 1: 60. Clotting time 18-25-24-24-20 minutes. *Fragility*: Hemolysis began at 0.46 and was complete at 0.26.

January 27 transfusion of 600 cc. was done. There was very slight reaction after it. Next day he felt great subjective improvement which continued for several days. February 10 a second transfusion was done. Following it he had fever.

Throat exudate examination on dark field showed no spirochetes or organisms of Vincent's angina. *Vital capacity*, 4300 cc. *Basal metabolism*, + 21 percent. *Gastric analysis*: Fasting contents, 33 cc. yellow-white mucous material; no free HCl; total acid 5; Guaiac test (for occult blood), positive; 3 to 4 red blood cells and 2 to 4 leucocytes to each high-power field. Test meal: 24 cc. whitish bread remnants; no free HCl; total acid, 4; Guaiac test, positive. *X-ray*: Heart dilated; no evidence of pathology in any part of the gastrointestinal tract; February 17, left frontal sinus distinctly less radiant than the right, antrum on this side also a little cloudy.

February 16 he complained of sore throat and a very sore tongue. On the soft palate were several small areas of superficial ulceration. The right half of the tongue was markedly swollen, red, and extremely tender. The next day the tongue was more swollen and there were several very tender submaxillary nodes on both sides. During the day marked edema of the neck developed. The saliva showed many streptococci. That night he was much worse. The tongue filled the whole mouth and pharynx, causing obstruction which necessitated the use of a tube. Early the next morning, February 18, he died.

Case No. 4. Pernicious Anemia with Endocarditis

First Entry: A Swedish iron moulder of 38 entered May 8, 1922, for relief of tremor and weakness, of a year's duration, in the right arm.

Family History: Unimportant, except that his mother died of cancer.

Habits: Good.

*Before and after transfusions.

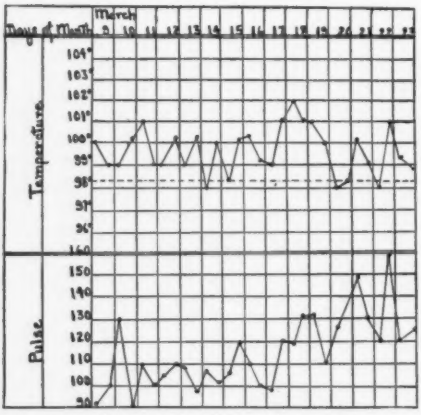

Chart No. II—Clinical Chart of Case No. 4

Occupational History: For thirteen years he had worked in a brass foundry, exposed to fumes of manganese bronze. He had frequently had chills and fever ("brass founder's ague") from breathing the fumes.

Personal History: He had always been well. For thirteen years he had had frequent headaches, usually during the day. For a week, in 1908, he had diplopia following a severe cold. Two months ago he weighed 123 pounds.

Present Illness: A year ago he had sudden onset of tremor of the right hand which had continued nearly the same ever since. At the same time the hand was very stiff and he had difficulty in moving the fingers. For a year he had urinated three times at night. Last November (1921) he was forced to give up work because of weakness of the hand. At that time his tongue was very sore for a month, burned, and felt too big for his mouth.

Three months ago he had knife-like pains in the right arm and increased stiffness in the knees. Soon after this he had an attack of epigastric pain which lasted several days, occurring usually after meals and associated with much belching of gas. A month ago he had numbness of both hands which had continued, more in the right hand. Three weeks ago he had another attack of epigastric pain, occurring after meals for about two weeks with much belching of gas. He had always been pale, but thought he had been getting more so lately.

Records of the Out-Patient Department: November 30, 1921, face appeared set. Obvious tremor of the right hand. (Note in the Industrial Clinic: "Rigidity of muscles, tremor and speech characteristic of manganese poisoning as well as of Parkinson's syndrome.") December 8, 1921: Lumbar puncture showed two cells. Ammonium sulphate and alcohol tests negative. Pressures 160, 110, 85 and 70. December 13: Wassermann test negative. February 3, 1922: Knife-like pain in the right arm and increasing stiffness of the knees; weight 133. February 25: Fundus examination showed margins clear; vessels normal; some questionable temporal pallor. April 8: Some paresthesia; nycturia 2 to 3 times. May 6: Hemoglobin 40 to 45 percent; reds 1,820,000; leucocytes 4,600; marked anisocytosis and poikilocytosis; rare polychromatophilia; rare stippled cells; platelets normal. Patient very pale, with slight yellow tinge. Speech slow. Tremor of right hand. Tongue smooth, shiny, furrowed, papillae atrophied. Weight 118½ pounds.

Physical Examination: An emaciated man with a mask-like face, a monotonous voice, and signs of loss of weight. (May 14, weight 107½.) Skin lemon-yellow. Sclerae pale, not definitely jaundiced. Pea-sized glands in the axillae. *Lungs* clear. *Heart* normal except for a blowing, systolic murmur at the apex. T_1 greater than A_2. Artery walls palpable. *Abdomen*: Liver edge barely palpable. Pupils and reflexes normal. *Extremities*: Intermittent Parkinsonian tremor of the right arm, more often present when he used the arm; grip on the right very weak; slight atrophy of the infra- and supraspinatus muscles on the right. *Temperature*, 97.3° to 99.6°F.; *Pulse*, 70 to 100; *Respiration*, normal.

Urine: Normal amount; specific gravity, 1020; cloudy, with occasional leucocytes at the single examination.

Blood: May 8, hemoglobin, 60 percent; leucocytes, 9,900; polymorphonuclears, 62 percent; reds, 2,320,000, with very marked variations in size, shape and color, from microcytes to very large, oval, lymphocytic cells with many-tailed and vacuolated forms; a rare large cell showed a few stipplings; one megaloblast; platelets did not seem diminished and tended to clump well; reticulated cells 1.1 percent.

May 9, leucocytes 4,900. May 15, hemoglobin, 60 percent; reds, 1,770,000; reticulated cells, less than 1 percent. May 17, hemoglobin, 60 percent; reds, 1,880,000. May 19, hemoglobin, 60 percent; reds, 2,376,000; clotting time 9½ minutes; bleeding time 2½ minutes; serum dilution, 1:35. *Wassermann* test, negative.

Gastric Analysis: Fasting contents, 30 cc. of very slightly cloudy fluid; no free HCl; total acid, 6 cc. per 100 cc. of n/10 NaOH; test meal, free HCl, none; total acid 16 cc. *Basal metabolism*, + 16.

Neurologic Consultation: The patient appears much weaker than he was a few weeks ago. Tongue pale and atrophic. Ocular fundi not well seen. Arms show general weakness. Right arm and hand show a gross tremor when at rest, resembling a paralysis agitans type. This stops on motion. No tremor on the left side. General weakness of legs, but no special loss of muscular power. The facial expression, voice and the tremor, when present, were thought to be very typical of paralysis agitans.

The blood picture remained unchanged throughout his stay in the hospital, though he had a good appetite, gained eleven pounds, and felt stronger. May 22 he was discharged.

History of Interval: In the summer of 1922 he regained his strength and in the autumn did light work for three months. In December he began to have palpitation on exertion, dyspnea on walking uphill when the day's work was over, and a cough which lasted all day and was sometimes productive of yellowish sputum.

The cough continued and the weakness increased until he was unable to come downstairs. When working he urinated four or five times at night. Since the tremor began he had had occasional incontinence, occurring as a dribbling if he did not reach the stool quickly. Attacks of dyspnea had accompanied his weakness. For six months his fingers and toes had been numb. Best weight 150 pounds, in December, 1922. Usual weight 140. In the past few months he had had occasional edema of the ankles. This occurred also after his previous attack of anemia.

Ten days ago he began to vomit if he exerted himself before breakfast. The vomitus sometimes contained food eaten the day before. It was usually green and bitter. He also vomited during or soon after meals. He had been in bed for a week. Five days ago he had diarrhea lasting three days. He had noticed some blood in his stools after being constipated. He had hemorrhoids. Since November, 1922, he had noticed a constant burning and tickling in his throat. He often felt hot. He had had one attack of sharp pain in the right lower chest coming in periods of two or three minutes' duration for three hours, making him cry out, lie down and take shallow breaths.

Records of the Out-Patient Department: June 22, 1922, hemoglobin, 55 percent; reds, 1,800,000. September 20, hemoglobin, 70 percent; reds 4,190,000. January 22, 1923, hemoglobin, 45 percent; reds, 1,760,000. January 19: Throat lesion not diagnosed; dark-field examination negative; fissure at anterior tip of tongue.

Second Entry: March 11, 1923, he returned complaining of general weakness of three months' duration.

Physical Examination: Well nourished; skin and mucous membranes pale; skin yellow; tongue smooth and tremulous; sclerae slightly icteric. *Heart*: No enlargement noted by percussion; a blowing, systolic murmur at the apex and the third interspace. *Blood Pressure*, 100/60. Abdomen, negative. *Extremities*: Tremor during examination with the slight exertion of sitting up. Very slight edema of the feet; none of the ankles.

Temperature and Pulse as shown in the chart. *Respiration*, 20 to 36; above 26 on only two occasions. *Urine*: Specific gravity, 1012 at both of two examinations; rare leucocytes at one.

Blood: March 11, hemoglobin, 40 percent; leucocytes, 2,400; reds, 840,000, well filled; rare anisocytosis and poikilocytosis; many microcytes. March 12, hemoglobin, 30 percent; reds, 1,168,000; many pear-shaped, elongated and spindle forms, many microcytes, many dark stained macrocytes; platelets few. March 13, polymorphonuclears, 34 percent; lymphocytes, 63 percent; nucleated reds, 3. March 15, hemoglobin, 30 percent; leucocytes, 5,600; reds, 1,340,000. March 18, leucocytes, 3,100. March 23, hemoglobin, 10 percent; reds, 500,000; Wassermann test, negative; serum dilution, 1:30.

Gastric Analysis: Fasting contents, 20 cc. of white, mucoid fluid; no free HCl; total acid, 5 cc. n/10 NaOH; Guaiac test, negative. *Test meal*: 15 cc. of mucoid material with crumbs; slight bleeding at the end, not included in the 15 cc.; free HCl, faint trace; total acid, 4 cc.

Orders: March 11, anemia diet.* March 12, codeine, gr. 1/2, by mouth, for cough;

**Breakfast*: Half a grapefruit, oatmeal with cream, toast, one egg, two pieces of bacon, one glass of milk. *Noon*: Baked potato, steak, a vegetable, bread and butter, fruit or vegetable salad, prunes or other cooked fruit, milk. *Supper*: A chop, bread and butter, a vegetable, a pudding (maple rice, chocolate blanc mange, tapioca, Bavarian cream), one glass of milk.
In addition to the milk noted the patient is given all the milk he will drink.
In certain cases the meat is omitted once or sometimes twice a day.

Russian mineral oil, 1/2 ounce twice a day; aromatic fluid extract of cascara with evening oil p.r.n. March 13, dilute HCl, minims xx, before meals. March 15, Russian oil, 2 ounces twice a day. March 17, codeine, gr. 1/2, by mouth; morphine, gr. 1/6, hypodermically. March 18, ice bag to precordia p.r.n. March 20 and 22, morphine, gr. 1/6, hypodermically. March 21, codeine, gr. 1/2, by mouth.

The evening of March 17 the patient complained of general malaise and fever. No cause for the elevation of the temperature was found in the throat or chest. Next day the heart was rapid, with a questionable rumbling, diastolic murmur. March 20, the heart had returned to its previous condition. March 23 the patient died.

Case No. 5. Primary Pernicious Anemia

A New England housewife of 40 entered January 16, 1912.

Family History: Her father died of "dropsy." One brother died of "heart disease."

Personal History: She had convulsions and sepsis for five months after the birth of the second of her two children. Since that time she had been sickly and nervous. Three years ago she had "nervous prostration"—was irritable but not irrational, held herself in various positions, and rapidly lost strength and weight. She was worse and better by turns. Two years ago she had endometritis.

Present Illness: For seven months she had had increasing weakness and marked loss of weight. She remained quiet all the time, in bed or sitting up, feeling stronger on some days than others. For three weeks she had been unable to stand or to move herself in and out of bed. She had diarrhea of four movements a day at times. Until four weeks ago she was cross and petulant. Since then she had been very quiet. At times her hands, feet and face had swelled for a few days. She ate very little, and had rare vomiting. She slept much in the day but not well at night. For twelve days she had had cough with sputum. Beginning ten days ago, she was irrational for three days. Her back was sore.

Physical Examination: A fairly well developed, thin, extremely pale woman, lying inert, speaking slowly with apparent effort. Mucous membranes very pale. Heart normal to percussion. Apex impulse in the fifth space, corresponding to the dullness. Sounds normal. Soft, systolic murmur over the precordium. P_1 accentuated. Pulses, small volume, fair tension. Lungs negative. Abdomen, slight general rigidity; visible peristalsis. Extremities negative. Vaginal and rectal examination showed nothing of importance, though the latter was not entirely satisfactory because watery fecal material oozed into the tube of the proctoscope. Pupils and reflexes normal.

Temperature, 98.1° to 101°F., until February 28, then 97.5° to 101.6°. *Pulse*, 97 to 126. *Respiration*, 19 to 28.

Urine: Amount and specific gravity not recorded; cloudy at one of three examinations; very slight trace of albumin at two. *Blood*: Leucocytes, 9,000 to 2,500; polymorphonuclears, 56 percent; reds, 1,500,000 to 600,000; some cells achromic some deeply stained; moderate polychromatophilia and variation in size and shape; slight stippling; four normoblasts; platelets normal or slightly decreased.

The patient slept most of the day, though not so well through the night. She ate all of an extra diet, and until January 28 seemed to be gaining a little. A week later she was incontinent of feces, motionless and apathetic. March 2 it is noted that there had been a remarkably gradual and steady progression of the condition since entrance. The mental mechanism seemed normal but nearly motionless. That day the respirations gradually but moderately rose, the pulse fell from 109 to 99, the temperature from 99.8° to 98°F. and she died.

Treatment

Although the prognosis in all cases of pernicious anemia is very grave, there are three principles in treatment which should be carried out: (1) removal of all discoverable infectious foci; (2) carefully selected diet; (3) avoidance of stimulation of the blood-forming organs, on the principle of rest of a damaged function. There are wide variations in response; advanced nerve degenerations are considered hopeless, while the most advanced grades of anemia have sometimes responded favorably.

A remarkable improvement generally occurs for a longer or shorter time following the administration of liquor arsenicalis in graduated doses, beginning with four minims three times a day, after meals, and increasing the dose by one minim every forty-eight hours until doses of eight minims are being taken; the doses are then gradually decreased in the same manner until the original four minims are again being taken. The treatment is then interrupted for a

week. This course of treatment is repeated for months.

Rest in bed and fresh air are essential. If cardiac failure is present, 1/240 grain digitoxin is given daily. Hydrochloric acid, dilute, 20 drops in one dram of gastron, well diluted in water, three times a day; one teaspoonful of milk sugar in a glass of water three times a day; and small doses of iron and strychnine three times a day may be tried.

The writer has not had very favorable results with blood transfusion, either by the direct or by the citrated method.

The Tonic Effect of Ultraviolet Radiations on Malnourished Infants and Children*

By EDWIN P. RUSSELL, M.D., Battle Creek, Mich.

THERE is no doubt concerning the beneficial effect of ultraviolet radiations on certain systemic affections and probably the greatest responses to this form of treatment are seen in childhood. Why light should improve the appetite and benefit malnourished children is a matter of debate at present. It is probably due to a number of effects on the living organism.

Light causes an increase in the hemoglobin and red cells of the blood and also causes a leucocytosis. It increases metabolism by increasing oxidation in the cells and is thought to act as a catalyser. It is thought also to affect the fat metabolism by acting on the cholesterol content of cells. It affects sleep in some way as it has been noticed in the cases treated that the children sleep better during and after a course of treatments.

The source of radiations used in our work has been a quartz-encased, mercury-electrode burner such as manufactured by several firms. They are often called "Alpine Sun Lamps."

Our initial dose has been two minutes to the front and two minutes to the back of the baby, with a daily increase of one minute front and back up to fifteen minutes front and back. The treatments were administered daily or every other day. The mothers were advised to bring the children daily for the first week so that a dose of ten minutes may be reached as soon as possible.

Case Reports

Case 1.—G. A., age 4 years. In winter of 1925 had influenza three times, with bronchopneumonia twice. Had pneumonia twice this past winter. Came to the clinic March 10 complaining of cough, tired feeling and loss of appetite. He had gained only one-half pound in the preceding nine months. Examination of throat was negative. Chest showed signs of trachea-bronchial adenitis. Ten quartz-lamp treatments were given over a period of three weeks. At the end of that time he had gained three pounds, was eating well, and feeling much better. The chest signs had disappeared.

Case 2.—H. S., age 6 years. Complaining of tiring easily, fainting spells, loss of weight, and very poor appetite. In preceding two years had had laryngeal diphtheria with a tracheotomy, whooping cough, and rheumatic fever. Had tonsils and adenoids removed. Had had colds all during the fall and winter. X-ray examination of chest showed no tuberculosis, but some enlargement of glands at bifurcation of trachea. Had a course of twenty quartz-lamp treatments over a period of three weeks. At the end of this time he had gained three and a half pounds, was eating well and had no complaints except that he still had a cold. The treatments ended February 3 and the patient has continued to do well since that time, according to telephone reports from the mother.

Case 3.—H. S., Jr., age 2 years. Patient had always been well until February 1, when he developed an acute upper respiratory infection complicated by bilateral otitis media. The streptococcus was found on culture. The ears were opened, drained about three weeks and healed. Patient did not convalesce as he should have done, but refused food and appeared to be tired most of the time. A series of eight quartz-lamp treatments was given over a period of two weeks. We have a record of his gain in weight for only the second week of treatments and during that time he gained two and a half pounds. He has been perfectly well since his treatments and has had an excellent appetite.

These cases cover the pre-school group fairly well. The following cases show the effect on infants under 1 year of age:

Case 4.—J. C. H. Brought to the clinic February 10, 1926, at the age of nine weeks, weighing only eight pounds, four ounces and with complaint of slow gain (two to three ounces a week, at most), a severe cold, diarrhea, and an infected umbilicus. His formula was essentially correct. On examination

*Read before the Genesee County Medical Society, April 13, 1926.

he was distinctly atrophic and had a pharyngitis and bilateral otitis media. Both ears were opened and a large amount of pus liberated. The umbilicus was excoriated and crusted over an area about the size of a half-dollar and there was a hernia.

Quartz-lamp treatments were advised, mainly for their local effect on the umbilicus. The diarrhea subsided in five days. The ears healed in ten days and the umbilicus in four weeks was completely covered with skin. The light treatments were discontinued, a total of twenty having been given. The gain in weight and change in appearance of the child were most striking. For two successive weeks following the cessation of treatments, he gained a pound a week and at the age of four months he weighed eleven pounds, five ounces, a total gain of three pounds, one ounce during the entire period, two and a half pounds of which were gained during the month of March.

There was no change in the type of feeding, modified cow's milk with dextri-maltose being fed. The dextri-maltose was suspended during the treatment period and the calories were increased from time to time to satisfy the demands of the infant.

The results in this case led me to advise ultraviolet radiations in the following cases:

Case 5.—M. E. O. One of twins. Birth weight, four pounds, nine ounces. Patient did not do well from birth on, but had projectile vomiting which was apparently due to pylorospasm, associated with hypertonicity. This was fairly well controlled by atropine. February 12, at the age of three months, she weighed only eight pounds, nine ounces, and looked very ill. Quartz-lamp treatments were advised, daily for two weeks. During the second week she began to take her feedings and to gain in weight. March 26, at the age of four and a half months, she weighed ten pounds, seven ounces—a gain of two pounds, one ounce in one month.

Case 6.—V. L., age eight and one-half months. Was brought to the clinic because of noisy respiration and because she was not gaining in weight. She also had facial eczema. As the mother had been in the Howell Tuberculosis Sanitarium in 1924 and in Calhoun County Tuberculosis Hospital prior to the birth of the child, an x-ray was made of the chest which showed an enlarged thymus, but no evidence of tuberculosis. A Von Pirquet test was also negative. X-ray therapy was used for the thymus and the noisy respiration improved. A short time later the child developed otitis media which required paracentesis. This healed promptly, but the child refused food, was very irritable and did not gain. March 19 she weighed eighteen pounds four ounces. Quartz-lamp treatments were started on that date and a course of fourteen were given over a period of nineteen days. At the end of that time, April 8, the patient weighed nineteen pounds, fourteen ounces—a gain of one pound, ten ounces. Her eczema had disappeared and she was eating and sleeping very well.

These cases are all nonrachitic so that the improvement cannot be said to be due to the improvement of the rickets. In these cases we are dealing with children who have had infections, either at the onset of their trouble or aggravating it. Also there was poor appetite or refusal of food, making dietetic treatment alone difficult if not impossible. Dietetic treatment was given a trial first in most of the cases I have treated, with little if any result. Another fact to note is that these children were brought to the clinic during the late winter months after having gone through that period of the year in which there is the least amount of sunlight and the ultraviolet content of the sun's rays is at a minimum. This would make ultraviolet treatment rational even though we may lack conclusive scientific proof of its physiologic action.

It would seem then that we have here a "spring tonic" that is superior to sulphur and molasses and more pleasant to take. At any rate, light treatment gives results; and results are what our patients demand of us.

Toxemias of Pregnancy*

By ALFRED J. MITCHELL, M.D., Chicago, Ill.

SIMPLE nausea and vomiting of pregnancy occurring about the fifth week, corresponding to the second menses (suppressed) and continuing variably throughout until the middle of the fifth month, concomitant with signs of life of the fetus, is present in about 50 percent of all pregnancies. The nutrition of the patient is not disturbed to any appreciable degree. Bizarre desires for food, aversion to certain articles of diet and mild changes in the disposition of the individual are common.

In all probability this is merely a mild form of toxemia dependent upon minor metabolic disturbances and in spite of the suggestion of the toxic element may nevertheless be classified as physiologic.

No special forms of treatment are indicated. The vomiting usually ceases abruptly and the patient continues to normal term.

*Abstract of an address delivered before the Medical Round Table, of Chicago, August 10, 1926.

Hyperemesis Gravidarum

When the degree of vomiting reaches the point where ordinary forms of treatment are of no avail and nutritional disturbances follow, associated with toxic symptoms, the condition then attained may be termed pernicious vomiting of pregnancy, hyperemesis gravidarum or toxemia of pregnancy.

Our present knowledge of the etiology is as yet not positive, but researches by recent investigators would tend to show that the primary underlying cause is carbohydrate depletion and deficiency due to the demands of the growing fetus and uterus upon the glycogen store in the liver.

Predisposing causes essential to be considered are a hypersensitive, markedly stimulated sympathetic nervous system; the glycogenic disturbance of the maternal liver produced by demands made upon it by the fetus; and insufficient action of the kidney, liver and intestinal tract.

The vomiting is of a protracted type and violent, presenting coffee-ground characteristics, due to the associated hematemesis. The vomiting of large amounts of fluid daily causes marked dehydration, starvation, inanition, rapid emaciation and the acidosis associated with such states.

The normal amount of uric acid in the blood is 3 mg. to each 100 cc., and 30 mg. of nonprotein nitrogen. This may be taken as the index of renal activity. In the toxemias it is customary to find a low blood sugar; the urine disclosing varying amounts of sugar, acetone, diacetic acid, albumin, red blood cells and casts.

In spite of glowing reports and the prevailing optimism in many quarters, pernicious vomiting of pregnancy must be regarded seriously from the prognostic basis.

In the past, many forms of treatment have been tried and found wanting. In considering the etiology, a rational form of treatment may be outlined. It is essential to bear in mind the carbohydrate depletion and deficiency, with the associated dehydration; and in alkalization of the patient, plus carbohydrate replacement, we have at our command a reasonable means to correct the basic disturbance.

Increase the activity of the liver, kidney and intestinal tract by a high carbohydrate diet, rectal feeding, hypodermoclysis, enteroclysis and the daily intravenous injection of a combined solution of 500 cc. of 2 percent sodium bicarbonate and 500 cc. of 10 percent glucose, with ten units of insulin twice daily.

When happy in its conclusion, diuresis is established, vomiting ceases, the blood pressure rises and the pulse rate diminishes. When no response to treatment follows or a recurrence supervenes, therapeutic abortion should be performed.

Eclampsia

By eclampsia is understood that toxemia which occurs, usually in the latter months of pregnancy, and is characterized by a convulsion or a series of convulsions of a tonic and clonic type, associated with definite renal and hepatic pathology, and occurring ante- intra- and post-partum.

Its etiology is as yet unknown.

In the prodromal or pre-eclamptic stage the prominent symptoms noted are a rise in the blood pressure to over 150; characteristic changes in the urine; headache; visual disturbances; edema of the face and extremities and diminished urinary excretion.

The treatment is essentially medical until labor begins and then the procedure adopted depends upon the indication present.

Essential in the prophylaxis of eclampsia is the pre-natal care afforded the pregnant woman. When proper pre-natal care is given the percentage of eclamptic cases falls correspondingly and in this measure lies our greatest hope of its eradication.

Medically one suggests a restricted, nonprotein, salt-free diet; push the liquids; activate the bowels daily with a saline; observe the blood pressure readings closely and if the pressure rises above 150 mm., inject, intravenously, 20 cc. of a 10-percent solution of magnesium sulphate.

When the convulsions are initiated, labor usually begins and no steps are taken until complete dilatation is present. Avoid trauma, infection and shock. These patients are poor surgical risks. One-half grain of morphine usually controls the convulsions, but may be repeated in ¼ grain doses if necessary. Twenty cc. of a 10-percent solution of magnesium sulphate, hourly until convulsions are checked. This procedure is to be repeated if the convulsions recur or if the blood pressure readings taken hourly indicate a rise nearing the height at the time of the convulsion. Restless, semi-comatose and delirious patients may be given chloral hydrate and sodium bromide per rectum.

Surgical Seminar

Conducted by GUSTAVUS M. BLECH, M.D.

[Note. The Seminar is devoted entirely to the practical interests of surgeons. Problems and their discussions are solicited. Contributors must give their names but whenever desired these will not be published. Questions for this department should not exceed fifty words. Address all communications for the Seminar to Dr. G. M. Blech, 108 North State Street, Chicago.]

Surgical Diagnostics (Continued)

Palpation. This procedure never can nor will replace the surgeon's eye, but augments it or acts as a substitute for it in hidden lesions. Palpation, as practiced by some surgeons, has been admired as a feat comparable only with that of a master pianist. I myself have seen an eminent surgeon barely touch an abdomen with his fingers and make a diagnosis. His students appeared to be hypnotized by that man's uncanny ability, and I have heard them ask each other how it is possible to determine size, character and position of a deep abdominal growth or even an inflamed abdominal viscus by merely touching the wall. I tell you now what I told those youngsters then, that such teaching is misleading and calculated only to advertise the teacher.

I recall how I, as a youngster, nearly became confused when I entered the ward of an eminent clinician, whose method of teaching was something like this: He would step to a bed, ask a question or two, look at the fever chart and then sonorously proceed to make a diagnosis; e.g. pneumonia. As I felt I could never develop that man's "intuition", I left the university and went where another professor impressed on us the need of careful physical examination. There I *learned* something and there I also heard the short and ugly name applied to my erstwhile wonder-teacher. Let no one be fooled. Intuition is a fine thing to possess; but I would no more trust it than any story of miracles. I would want to confirm it with my own eyes.

This, however, does not mean that when we palpate an abdomen we must squeeze the life out of the poor patient, for this rough measure will accomplish worse than nothing. We may even do a great deal of harm, especially in cases suspected to be infectious in character (pus) or in growths with liquid contents likely to be ruptured (cysts, extrauterine pregnancy). A surgeon's hand should be—a surgeon's hand, and not that of a blacksmith. Palpation means what the very word implies—*palpare*, to touch—and not to squeeze. The law is to "squeeze" just so much as is necessary to obtain with the fingers a sense of realization what the tissues between the palpating fingers are like. This, under all circumstances, requires poise both on the part of the surgeon and the patient. A frightened, irritable or struggling patient is not a good subject for palpation. The surgeon will therefore first mentally prepare his patient for what is to come. The position of the patient plays an important part, especially in abdominal conditions, with the possible exception of hernia, when the standing position often affords great advantages.

To palpate the abdomen or pelvis, the horizontal position of the patient, with elevated and flexed lower extremities, is ideal. The abdominal muscles thus become relaxed. If that proves a failure we direct the patient to breathe deeply in and out and the palpating fingers adapt themselves to the respiratory movements. When this fails general anesthesia is our last resort.

In suitable cases one should endeavor to have both bladder and bowel emptied before attempting to explore the abdomen by palpation.

The technic of palpation as practiced by the writer is as follows: The patient is "fooled" at first by the hands gliding gently over the abdomen—and this is, by the way, the only part of the body where palpation becomes a veritable art, for elsewhere simple pressure with the fingers usually suffices. While the patient receives the impression that palpation is a gentle manipulation, he relaxes and assumes a passive or nonresistant attitude, the finger-tips occasionally press a little through the wall. Usually one soon learns the seat of the trouble, if any, and gradually concentrates in that direction, pressing the fingers around the suspected lesion while the palm of the examining hand remains flat on the abdominal wall.

In suspected appendicitis or in other inflammatory conditions, such as sigmoiditis, we have made it a rule to begin and continue the usual examination, at least for a short while, on the healthy side and gradually palpate towards the affected side

while diverting the attention of the patient. If one now hears the patient complain when the appendix region is palpated, one can rule out deception or self-illusion.

The palpation of tumors of the abdomen is very often made difficult by the presence of liquid (ascites) or air in the abdominal cavity. To detect the tumor the fingers must be pushed against the opposite side rapidly, alternatingly and successively, though this maneuver is not altogether infallible.

Let us assume that one feels an abdominal tumor. While the surgeon's eye is of the greatest possible importance in all diagnostic examinations, the palpating fingers can now answer questions that the eye alone could not. Is the tumor movable? Is it part of the abdominal wall? Is it hard or soft? Is it painful? These are questions that the fingers must answer. We change the patient's position and note whether that affects the position of the tumor. We lift up the abdominal wall and recognize whether the tumor remains where it was or whether it accompanies the lifted wall.

Finally, both hands are needed to determine the degree and direction of mobility. We need both hands to palpate the kidneys, both when a tumor is suspected or when mobility is to be determined. Examination per rectum and per vaginam is mentioned only for the sake of completeness, and inflation of the colon is mentioned as a means of determining whether a tumor in the left hypochondrium is part of the left colonic flexure or of the left kidney or spleen. Inflation will render a colonic tumor more distinct, and will cause the mass to disappear if it belongs to the kidney or spleen.

No surgeon will allow a female patient with abdominal trouble to leave the office without a thorough vaginal and bimanual examination of the pelvis and pelvic contents. The palpation of the uterus and adnexa and the parametrium need only be mentioned, for this is too well known a procedure to need special discussion, especially when one can examine a woman with relaxed abdominal walls and free from excessive obesity; but what is generally overlooked is a thorough rectal examination of patients of both sexes. Only a few days ago I was consulted by a woman who told me that two physicians who had examined her "most carefully" had diagnosed a slight pelvic exudate and bleeding piles. I examined this woman per rectum and to my horror detected a carcinoma.

Rectal examinations of men will, of course, be undertaken in all cases where histories point to affections of the genito-urinary apparatus. The palpation of the prostate is a very simple procedure, but to determine the ureters and seminal vesicles is not always easy. The rule is to have the rectum thoroughly emptied by enemas first. Having the patient lean over the examining table or a chair gives a good position; but the lateral-prone position, with the coccyx well over the margin of the examining table and the legs drawn up against the abdomen, will give the examining finger a deeper range. Sweeping the finger around the anal region alone is to be condemned as ineffective. The examining finger must be forced up as high as it will go, if necessary by pressing the middle finger against the perineum, and rotated until the sacrum and ischia can be mapped out. Needless to say, the hand should be gloved and the glove well lubricated. The introduction of the examining finger must be an act of extreme gentleness but once the finger has passed the sphincters, thorough palpation will not be complained of by the patient except when there is an irritable ulcer.

We shall close the subject of palpation of the abdomen with this remark: that the more carefully and the more often we thoroughly palpate the abdomen the more will we reduce the need for exploratory laparotomy. An exploratory laparotomy should, by the way, never be undertaken unless one is prepared to terminate this major surgical procedure as a therapeutic operation, provided, of course, the patient's consent has been obtained for such a step.

In the next issue we will study the neck, with particular reference to the palpation of goiters and other growths.

(To be Continued)

Discussion and Solution of Problem No. 8

Recapitulation (See September CLIN. MED. p. 654). A policeman, 30, in normal health, without any previous disease, fell on an icy sidewalk. He was unconscious and was taken to the nearest hospital. A radiograph showing no lesion, a diagnosis of concussion of the brain was made. Consciousness returned in a few hours and in 36 hours the patient was discharged. The patient's complaint that he suffered from pain in the forehead over the left eye was attributed to the bruise, due to striking the ground on that spot. He was given a lotion and the promise that the pain would soon disappear.

The painful spot, however, remained, and the pressure of his cap annoyed him. Three years after the accident he suffered increased pain over the left eye and experienced an epileptic seizure. The attacks recurred quite often, compelling him to seek aid at the hospital. A competent internist pronounced the seizures to be genuine epilepsy and prescribed appropriate internal therapy. Three months of treatment having proved futile, a surgeon is called in.

The requirement demands that, first of all, the question be determined whether the diagnosis of genuine epilepsy is correct and whether the case is a surgical one; and, if surgical therapy is indicated, what sort of an operation must be performed. The requirement also assumes that, an absolute diagnosis being impossible, the rationale for surgical therapy should be stated to all concerned.

Discussion by General Geo. Acheson, St. Martins, N. B. Canada

Replying to the three requirements, I would say:

First: I assume the seizures to be genuine epilepsy, of the Jacksonian or cortical type, and due to trauma; therefore this is a surgical case.

Prior to his accidental fall in 1920, this patient had no history, either personal or familial, having any bearing on the case. Since that time, however, he has had constant pain over the site of the injury, and, after an interval of three years, repeated attacks of what competent observers diagnosed as epilepsy.

Second: In view of the facts stated, surgical therapy is indicated. The skull should be trephined at the site of the original injury, to determine, if possible, the pathologic condition present. On the findings will depend what further operative therapy is advisable. There is evidently some irritant to the cortex, which may be an exostosis, thickening of the periosteum or dura mater, tumor, tubercle, gumma, etc.

Third: Before proposing surgical intervention, I would like to know the exact character of the convulsive seizures, to determine, if possible, the location of the cortical irritant, what motor area is affected and in what order the muscles react; also what, if any, subsequent paresis. I would like to know the result of a Wassermann test.

Assuming that a definite diagnosis is not possible, I should advise surgical intervention: (1) to determine, so far as may be, the nature and extent of the intracranial pathologic condition; (2) to remedy the existing condition by removal of the cause producing it, if that be possible; (3) in case the cause cannot be removed, to ameliorate the symptoms by lessening intracranial pressure.

Discussion by Dr. M. O. Robertson, Bedford, Ind.

First: I think it highly improbable that this is a case of true epilepsy, even though the seizures be general in character. I presume there are no aurae suggesting a local lesion, but I have the idea that close observation at the beginning of the seizures would have revealed such a manifestation. It has been my experience that the Jacksonian type of epilepsy frequently becomes general in character when not promptly relieved.

Against a diagnosis of true epilepsy is the age and history of the patient; and on these two points alone it appears to be a surgical case.

Second: Surgical therapy is indicated and should consist in trephining at the site of injury, which is still tender, unless evidence can be obtained to prove irritation at some other point.

Third: Even if this case has all the earmarks of true epilepsy, surgical therapy is indicated because nothing has been and nothing can be attained by medical treatment and the risk of operation is outbalanced by the chances for recovery. In the statement to the family all this should be pointed out, but the prognosis with reference to relieving the patient should be guarded.

Discussion by Dr. John Clark, Latham, Kansas

There is no doubt in my mind that the diagnosis of epilepsy is correct and that at first blush the picture is that of a nonsurgical case.

We are confronting the late results of an injury to the head and the radiographic interpretation and findings on first examination must be rearranged.

One can hardly definitely discuss laceration or compression or fracture or concussion, for we do not know what happened. We do know, however, that occasionally severe injuries give but slight trouble, while seemingly slight injuries leave serious results. It is, of course, possible that the epilepsy in this case is hereditary, the

trauma having been the cause of a "touch-off".

There are a number of things which interest me. What about the late signs of syphilis? Of course, we are to be guided by the absence of signs of abnormality of the nervous system. He has been observed by a competent man and this shakes a conception of a traumatic or even a hereditary epilepsy. It is a rare thing to see a competent internist fail to make an impression by three months' treatment on a case of epilepsy. We think of a tuberculous manifestation, and this cannot easily be dismissed. Certainly there is definite, serious trouble somewhere.

Occasionally a cerebral abscess follows injury. It may develop in a silent area and may be unnoticed because it is walled off from the brain tissue. It will be recalled that the patient had a painful spot and an attack of increased pain preceding his first seizure. The anatomic arrangement of the sinus and nose making infection possible suggests abscess as a logical deduction. The x-ray should have shown some injury to the skull and there must have been some injury to the brain to develop a simple traumatic epilepsy. Like an abscess, a cyst or tumor could remain silent for a while and later produce a picture as given in this case.

Taken all in all, it seems the proper thing to recommend an exploratory operation. I am assuming, of course, that an absolute diagnosis is not possible. Of course, all sensory and motor tests should be made before operation and while no great promise can be held out so long a time after injury, some benefit can be predicted. While surgical procedures are discouraging in cases of this kind, an exploration is justifiable.

Only one query in conclusion. The painful spot on the forehead. Can a painful scar be ruled out?

Discussion by Dr. H. O. Strosnider, St. Francisville, Mo.

My experience in a large state hospital for the insane is that ninety percent of all convulsions are either due to epilepsy or will run into genuine epilepsy if allowed to continue for any length of time. This dictum applies to adults. A patient at thirty, developing epilepsy, generally has cerebral syphilis and a blood Wassermann test would clear up the diagnosis. Epilepsy following chronic alcoholism is due to cerebral arteriosclerosis or edema of the brain. The symptoms of a brain tumor are classic. In traumatic epilepsy there is a definite history of trauma often years before, so that the patient has forgotten all about it.

In the present case after three months' scientific care without result, the family must be told that the patient should be trephined for exploratory purposes, as the sole means of holding out any hope for a cure. Trephining in itself is not a very dangerous procedure. Before operating, any painful scar on the scalp should be excised, as it may be the seat of an aura.

The exploration will aim to determine or exclude fracture of the skull, bone fragments, osseous growth, cysts due to intracranial hemorrhage and to relieve intracranial pressure, thus relieving the headaches and averting a tendency to sudden death.

After operation, five years must elapse before one is sure of a cure.

Discussion by Dr. D. H. Nussbaum, Storm Lake, Iowa

The diagnosis of epilepsy is correct and, doubtless, we have to deal with a case of surgical epilepsy. I base this opinion on the fact that the patient had no epileptic attacks before the injury and that there was more or less pain ever since the occurrence of trauma in the forehead where it struck the icy ground when he fell.

To me it is obvious that the patient had received a greater injury than the outward signs indicated and more than a radiograph could show. I am going so far as to say that there may have been a fracture of the inner plate of the skull, producing sufficient compression to cause chronic irritation either from a spicule of bone or from scar formation.

It seems from the evidence as presented that the removal of the cause is the logical thing to do and this can be accomplished only by surgical intervention. The outer plate of the skull should be removed to an extent sufficient to reveal the inner plate for the full extent of the injury—in other words, we make a thorough exploration of the involved area. I do not believe that the disturbance of the inner plate is very great, for otherwise the symptoms would be more severe. Failure of three months' medical treatment to produce any decided result shows the distinct relation between the pain in the forehead and the epileptic seizures.

The family should be advised that, while a miraculous cure cannot be expected, the surgical procedure is the only logical thing to do and that its effects on the future well-being of the patient may be far-reaching.

Discussion by Dr. Charles E. B. Flagg, San Antonio, Texas

One may at once exclude Jacksonian epilepsy, for the findings of the internist may be accepted with finality. We assume, of course, that a Wassermann test, both of the blood and spinal fluid, has yielded negative results.

One can, in the light of the sincere efforts to control the seizures, earnestly point out to the family that surgical therapy is not only the logical but the proper thing to do for the patient.

Assuming that an absolute diagnosis is impossible, the area of the injury should be thoroughly explored. Assuming that neither scar nor tumor of any kind be encountered in the explored region, the left motor area should be subjected to careful scrutiny. It goes without saying that any pathologic lesion or condition that presents itself will dictate the surgical procedure to be undertaken before closing the wound.

Solution

This is an interesting case for two reasons: *First*, because it is one that may occur to any human being at any moment and may come under the scrutiny of any practitioner no matter where located; and, *second*, because the not infrequent trauma concerns one of the most interesting human organs —the brain.

I was glad to present it as a personal experience, and I am gratified that I have received many letters giving brief opinions and at the same time expressing appreciation of the character of the problem.

In taking up the problem we must visualize two things; *First*, that we appear as a surgical consultant after a competent internist had given up; and, *second*, that the past history, as given in the problem, is to be interpreted to mean that there was nothing in the past to indicate anything beyond the trauma itself which has any bearing on the problem. I stated that the man came to the internal department of a hospital three months before we see him in consultation. That means that he has had every test made that science knows of and neither his blood, urine, nervous systems or other organs were left without a most exacting investigation. Had anything abnormal been found or had there even been a familial history I would have so stated, and left it to the reader to make use of the data in any desired manner. As it is we have a healthy policeman before us who fell on his forehead, was unconscious for several hours, complained of pain at the site of injury and, after three years, develops what the internist says is genuine epilepsy.

It is not our province to quarrel with the internist about the exact meaning of the word epilepsy. We are surgeons, and when a highly respected colleague tells me that he has observed the patient to suffer from epilepsy, the best I can do is to accept it. After all, it matters little what form of epilepsy the man has—epilepsy is not a pleasant thing to have under any circumstances. But our internist calls us in because he knows that this case is produced by trauma. There is a lesion of the brain, doubtless in the vicinity of the site of injury. We can omit a painful scar of the scalp from discussion—not that I am afraid to discuss it, but I am afraid my neurologic friends will ridicule me—because there was no scar, otherwise I should have so stated.

I made a thorough examination of the head. The best part of the thing was that ordinary palpation anywhere caused no pain. As I did not mention this I will not refer to it now, but I hope to take this problem up again (that is, with reference to the significance of painful spots of the skull, to percussion or touch), at some later date, in connection with another planned problem.

Now, I, too, made only a tentative diagnosis and here is what I told both the patient and the family, after having talked it over with my colleague and his assistants:

This case is fairly plain to me as regards its significance. The trauma decidedly injured the brain at the site where the forehead struck the ground. The patient had a *commotio cerebri* at the time, which either cleared up in a few hours or maybe he had no such a thing—I do not know. But I am sure that there was contusion of the brain, localized at the site of injury, which very gradually led to a local infection or softening. This produced inflammation and this inflammation is responsible for the epileptic attacks. There is not a particle of doubt that we have symptoms due to localized inflammation and that there is perhaps softening of the brain. The operation is positively indicated. The prognosis is very doubtful without an operation. Barring infection, the operation should be successful.

I trephined topically. Bone and dura were free from any evidence of trouble but the arachnoid showed a fibrinous deposit about

three to four inches in surface. Cerebrospinal fluid escaped in unusual quantity. There was a decided pathologic change of a presenting gyrus, the place in question feeling much softer than other tissues in the vicinity. The meningeal membranes were very adherent. I excised the involved area, about one centimeter in diameter, and closed the entire wound without drainage. I had given morphine in large doses and very little ether. The patient slept throughout the day. The pulse was good.

The next day he was free from symptoms except for a slight rise of temperature. Recovery was uneventful.

I write this on the 9th of October, 1926. I saw the police officer yesterday. He has had no return of his pains and certainly no seizure. I believe that over three years' freedom justifies me in saying that surgery has a definite cure to its credit in this case, although I am aware that five years is the prescribed time limit. If within the next two years he should be attacked with seizures again, the patient will be ready to undergo another operation, for this will prove to him that, though I was unable to see any other focus of softening and inflammation, one may have existed beyond my reach.

I cannot conclude this comment without greeting General Acheson and thanking him, Dr. Clark, Dr. Strosnider, Dr. Nussbaum and Dr. Flagg for their able and enthusiastic discussions. The last two gentlemen are newcomers and I welcome them with the request to come again and again. Dr. Robertson is my old stand-by and I must also thank him for the following:

PROBLEM NO. 10

Presented by Dr. M. O. Robertson, Bedford, Ind.

Last August I was called to see a man, 65 years old. He stated that on July 4, without previous symptoms, he was unable to void his urine and called in a physician. The medical attendant made an unsuccessful attempt to introduce a catheter but by using various methods to encourage urination succeeded in causing the patient to void a small amount of urine after a good deal of delay. He has been receiving medical attention ever since but without any perceptible relief. He also asserts that he has no control over the flow; that is to say, he frequently wets his clothing during the day and his bed during the night, so that he is unable to tell the quantity of urine that escapes without his control. He estimates the quantity to be sufficiently normal, but in my presence he is unable to obtain more than a tablespoonful of urine.

An attempt to introduce a soft rubber catheter into his bladder proved without success. The general examination was negative, except for a large tumor which is felt in the lower abdomen, resembling that of a pregnant uterus.

I was not allowed to do more for him. The patient represented a poorly-educated type of man, and could not give me an accurate account of his previous condition. The only thing I did learn was that the first medical attendant had diagnosed a tumor.

I am fully cognizant that this case is not scientifically interesting and I am thoroughly aware of the proper procedures which should have been initiated. However, I believe the case interesting from a seminaristic point of view, because of the diagnostic difficulties and the therapeutic impotency forced upon me under the conditions above cited and I, therefore, submit this experience with the request that the requirement be: discussion of the possible diagnosis and treatment.

Clinical Notes and Practical Suggestions

Why Is the Country Physician Disappearing?

From time to time, an article appears on the subject of the growing shortage in the number of country physicians. In the July number of CLINICAL MEDICINE (p. 501), appears an article, "Diminishing Number of Doctors in the Rural Districts," which induces me to make a reply.

Various theories as to the cause of this condition have been advanced, but the real reason appears to have been overlooked. In my opinion, it is the fact that it is becoming increasingly difficult for a young man to equip himself for practice as a physician. The expense, in time and money, is prohibitive for a large class of able, bright young men, who formerly took up the study of medicine, and generally started practice in the smaller towns, remaining there or removing later to the larger cities, as inclination led them.

In going through medical college, the young man (formerly) obtained a general knowledge of all that was necessary to enable him to successfully practice his profession with credit to himself and satisfaction to his patients. Today, the man with a common school education has not the slightest chance to enter the medical profession. A college education is required. Six years are demanded for study. Ten thousand dollars will hardly be enough to acquire the diploma. The curriculum is filled with technicalities, glittering generalities, specialties and a thousand attractive but practically useless theories—I mean useless for the country physician. The equipment demanded is beyond the pocketbook of the average man, and very much of it, while interesting, is not actually needed.

I have been in country practice for forty years and in frontier practice for seven additional years. I never had a fraction of the impedimenta that today is considered absolutely necessary; and I certainly have no reason to be ashamed of my record. I belong to the old class of men who were fitted by education to meet, at the outset, all ordinary requirements; and it was up to me, as it was to all men starting out at my time, to grow in my profession and perfect myself as I progressed.

Today, the graduate is supposed to be so perfected in all the intricacies of the profession that there is no call for growth. It is the only profession, trade or business where a man starts out perfect. Such an expensively equipped man cannot afford to embark in country practice. It cost so much getting started that he cannot get returns on the investment in the rural districts, and no matter how noble the profession is, and how great good he can render to mankind, the doctor justly feels that he must make a living, so that the expensively equipped doctor of today simply cannot afford to take up practice in the smaller communities.

Today, the practice of medicine can be undertaken only by the sons of well-to-do parents, almost invariably city-bred and city-raised men. How many farmers' sons have the financial backing to enter the profession? Yet, some of the best among the older physicians came from the farm, when it did not take a small fortune to go through medical college. Is it to be supposed that the present country-raised young man has not the brains of the city-raised man? He simply has not the command of the same money. Give him an equal opportunity, as he used to have, making a sliding scale of requirements if necessary, and there will be no complaint of shortage of doctors in the country.

Your mechanic, your clerk, your professor, your baseball star, your storekeeper—all your various magnates and captains of industry—have to begin at the bottom and work up to whatever height their ability will take them. But your medical man must arise like the Phoenix, "full panoplied for war," at a heavy cost of money, time and labor. And then they wonder why some do not turn their backs on the city, with all its attractions, bury themselves in a little town

and practice in the country! That means constant work day and night, with little or no relaxation and recreation. It can't be done! If men are wanted for country work, give the right class of men the chance for training, as of yore. Unless this is done, it is useless to ask why the country doctor is passing. The cause is self-evident.

The present country doctor is growing older. The call of nature, age and death is making vacancies in the ranks of the veterans. The time is at hand when there will be a demand for the filling of these vacancies. The city physician will not make a business of doing country work. He cannot do it in connection with his city work; and, besides, the average country patient cannot pay the price.

At best, the city physician does not fill the place of the country family doctor. Sick country people need help, just as much as sick city people, and they will demand that help. If the regular profession will not arrange to fill these vacancies, the field will be taken by others. The movement is already gaining headway. What will be done about it?

JAMES L. NEAVE,

Dresden, Ohio.

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[Here is a thoughtful, cogent and logical statement of facts which are well known to many and of vital interest to all who are interested in the fate of the medical profession and of medical practice.

Many who are not in close personal touch with the situation in rural districts take the high ground that we must never recede from our present standards of medical education; but a past-president of the American Medical Association has hinted at just such an arrangement as Dr. Neave proposes.

But there is more to this question than the character and cost of a medical education. The people have learned something about what constitutes adequate medical service and are demanding it. But are they willing to *pay for it*? Very largely they are not. How about doing a little educating among the patients?

Here, too, comes in the very vital subject of the nonmedical practitioners. That they are gaining ground, in many places, is beyond dispute. Is Dr. Neave right as to the chief cause for this condition? It seems highly probable that he is.

Here is a matter which urgently needs free and *constructive* discussion and our pages are open to any man who has a sound, logical, practical and well-founded suggestion to make. Let us hear from many of our readers that, by the abundance of wise council, truth may be brought to light.—ED.]

INFRARED THERAPY IN DERMATOLOGY

About one year ago, the writer was circularized by the manufacturers of a well-known quartz lamp, to the effect that they were about to put on the market a new lamp whose therapeutic action was to depend upon the use of the infrared rays of the solar spectrum. Of course, as is always the case, this was claimed to be of use in all the branches of medicine.

The writer, being rather familiar with most of the forms of light in physiotherapy, particularly as they affect dermatology, and always interested and eager to use a new form, purchased the lamp. Having now used this for over a year, I feel constrained to tell something about its effects, only as regards the practice of dermatology.

In general, I may say that it is, at present, of very limited use in the treatment of skin diseases, with the possible exceptions of pruritus ani et vulvae, varicose ulcers and pyogenic infections.

I have found its chief disadvantage in the fact that the heat rays which it emanates are sometimes so intense as to be almost unbearable.

I would very much appreciate information as to whether anyone else has found it of value in any other dermatological condition.

JACOB SPITZ,

Boston, Mass.

CONSULTATION REQUEST

In May, 1922, I was consulted and asked to treat the following cases which I here describe:

A man and his wife and two grown sons had "spells." Sometimes one or all four patients would have two "spells" in a day and, again, weeks might elapse between spells. The "spells" usually came on in the morning. The patient became dizzy and had numbness of the hand and arm on one side or the other—sometimes the right and sometimes the left—which lasted about two or three hours. During this time each of the patients felt "foolish" and had a scratching sensation in the esophagus, "as if he were trying to swallow a wad of dry hair";

and he could see but half of any object he looked at—either the half on the left or right of a vertical line: sometimes it was the left half and sometimes the right. He could close either eye with the hand and still see the same half of the object.

At such times he cannot think of his own name nor the name of any object or person that he may be looking at or talking to. He will start to say something and will say anything else other than what he wants to say. There is absolutely no feeling whatever in the hand or arm of the side affected, but he can close or open the hand at will. When a patient sees the left half of the object looked at, then it is the right hand and arm that is numb, and *vice versa*.

Extreme hunger occurs during these spells. Sometimes nausea is present, but not always. The spells last two or three hours and gradually wear off, and a severe, throbbing headache follows, which also gradually wears off without being relieved by the usual headache remedies. A rather "queer feeling" hangs on for a day or two afterwards.

The patient fully realizes his feelings or condition and it does not excite him. He usually continues to work during these spells whether he happens to be at the time out on the farm or in the timber. All of the men are strong and hard workers.

Their blood pressure is normal; they have no deformities; digestion is good; pupils normal and respond perfectly to light; reflexes normal. A very thorough and careful physical examination revealed nothing abnormal. Complete *family history* negative.

In investigating, I find that there was no eating of mushrooms or anything out of the ordinary diet. There was one son, the youngest (age about 17) who was not mentioned in the report and who did not have these attacks; also a wife of one of the sons mentioned who did not have the attacks, and they all lived together and ate the same food. The various patients have been having these spells several months before they came under observation.

In July, 1922, I gave each of these patients *typho-bacterin* and since then not one of the four has had even a slight "spell" until July, of this year, when the two sons began having them again. They came to me for more typho-bacterin, of which I gave them three doses each and the "spells" stopped again promptly.

One of the sons was in the Navy during the World War (1918) and had some of these spells before he got the "shots" against typhoid fever. After these shots the spells ceased. He remembered this fact *after* I had given him the typho-bacterin in July 1922 and the attacks ceased again.

I do not know to what to attribute the results of the typho-bacterin, but believe it was merely a nonspecific protein reaction.

Can any reader of CLINICAL MEDICINE suggest the probable etiology of these troubles?

E. A. DOWNEY,

Huntland, Tenn.

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[This is a very interesting report and we hope that a number of our readers will comment upon it.

It looks as though there were some toxic factors affecting the whole family. There may have been some article in the diet which was to blame. We are writing to Dr. Downey for further details, but will be glad to receive letters from our readers. What influence could the typho-bacterin have had, unless, perhaps, that of a foreign protein?—ED.]

INDIVIDUALISM IN MEDICINE

There is no field of endeavor in which individualism is more necessary than in the medical profession. The doctor is an individualist. It is both well and necessary that this is so. Granted the proper professional training and knowledge, the physician should be free to exercise his best judgment, and in his valiant struggle against disease and death to bring to bear unhampered all his skill, personal judgment, knowledge and experience which he can summon to the mighty combat in which daily he engages. No friend of the medical profession could bemoan this or wish to change it. And yet there are times when the individual physician, oppressed by the manifold duties and responsibilities which flow from the high calling which he follows, is prone to forget that the attainment of the great ends to which he has dedicated his life—the safeguarding and protection of the public health—can best be served by combined action rather than by working alone.

Individualism is vital to your welfare; it should be fostered and encouraged, but individualism which refuses to unite and to cooperate in order to bring about the greatest good for the greatest number may become a danger and a menace to the accomplishment of the great aims for which you

have so nobly dedicated your lives, your strength and your high courage.—LLOYD PAUL STRYKER, in *New York State Journal of Medicine.*

PRINTED DIRECTIONS FOR PATIENTS

It has been my experience that verbal instructions to a patient regarding prophylaxis, diet or treatment are not only laborious and require frequent repetition, but are frequently forgotten after leaving the office.

In order to save time, and impress upon the patient the desirability of following the directions given, I have them printed. The recipient is advised to post the rules in a conspicuous place where they can be frequently consulted.

Appended are some of the more commonly used forms:

Confinement Instructions

Diet — Less sweets and pastry, small amount of meat.

Bowels—One or two movements daily.

Urine—To be examined at least once a month.

Olive oil rubs once or twice a day.

Walk moderate distance every evening.

Examination and measurement at about the fourth month.

At five or six months begin wearing abdominal belt.

Articles needed for home confinement:

4 dozen perineal pads
1 pint of olive oil
1 yard of sterile gauze
1 oz. Boracic acid crystals
1 oz. Boracic acid powder
¾ dozen diapers, 30-inch size
Bed pan
No rubber sheet, just plenty of newspapers.

Engage the nurse and have your things ready at least six or seven weeks early. If going to a nurse's home or hospital, omit the above list except the baby's diapers.

Notify the doctor at the first sign of beginning labor so that he can make arrangements to be with you.

Infant Diet at Six Months

At six months begin feeding cereals and vegetables, small amount at first, then increased as needed.

Cereals to use are as follows: Mead's barley flour, Mead's arrowroot, cream of wheat, or Robinson's groats. This last is for making thick gruel.

Cereals should be cooked in a double boiler for one hour. Do not use sugar on it. If it is necessary to sweeten it, then use a little milk sugar.

For the first feedings use two tablespoonfuls in a pint of water, place in a double boiler and cook for one hour or more.

The vegetables to use are: Mashed potatoes, mashed carrots, and spinach cut up very fine. Place a little butter on the vegetable.

There should be only four (4) meals daily, as follows:

6:00 A. M.—Bottle or breast feeding.
8:00 A. M.—Orange or prune juice, one tablespoonful.
10:00 A. M.—Cereal, and bottle, or milk from cup.
2:00 P. M.—Vegetable, and milk.
6:00 P. M.—Cereal, and milk from bottle or cup.

General Care of the Baby

1. *After nursing* always place the baby on his stomach over your left shoulder and pat him on the back until the air swallowed during nursing comes up. If you do this he will not be troubled with colic.

2. *Bath*—The baby should be bathed every day about 9:00 A. M. Keep the room warm, avoid drafts, and dry the baby quickly and well. Do not wash the baby's mouth.

3. *Weight*—A normal baby should gain, on an average, at least 4 ounces a week.

4. *Sleep*—Babies cannot sleep too much. Encourage sleeping and resting. It helps the baby to develop physically and mentally. Keep regular bed-time hours.

5. *Exercise*—It is good for the baby to use its muscles. This should be much encouraged at bath time and at changing time. Keep clothes and bed clothes loose in order to give the infant sufficient room.

6. *Fresh air*—The windows of the bedroom should always be open sufficiently to keep the air fresh. In addition, the infant should sleep or be out of doors at least once and preferably twice a day.

7. *Sunlight*—Unless it is too hot, place the baby's buggy in the sunlight, but do not let the sun shine directly in his face.

8. *Out of doors*—This is to emphasize what has just been stated, namely, that air and sunshine do much more good out of doors than indoors through windows.

9. *Cleanliness*—There is nothing more important in the care of babies than cleanliness. Bottles, nipples, and playthings should be always absolutely clean.

10. *Infections*—These are usually given to the baby by older people, school children,

parents and friends. Therefore keep the baby away from those having colds. Under no circumstances allow any one to kiss the baby on the mouth.

12. *Bowels*—The baby's bowel movements should be of a lemon or orange yellow color and at least two or three in number daily. Five is not harmful providing the color remains yellow and the consistency like paste. Greenish watery stools indicate that your doctor should be called in.

Questions for Mothers

If a child does not eat the proper foods, it may be the mother's fault. Mothers should ask themselves the following questions to see if they are making any of the mistakes indicated:

Do you fret about what your child eats and whether he is getting enough? If so, very likely at every meal time you make him the star actor in a little drama, and every child likes to be the center of attention.

Do you talk about his eating habits to other persons in his presence? If so, any child would feel important and would want to keep up being different.

Do you insist on feeding him after he is able to feed himself just because it is easier than to teach him? Better let him spill a little until he learns than to become dependent and fretful.

Is someone else in the family particular about his foods? Of course, a child likes to imitate older persons.

Do you choose plain, nourishing, easily digested foods and cook them well?

Do you let your child taste everything that grown persons have? A child used to having tea, coffee and highly seasoned foods and too many sweets has lost a healthy appetite.

Do you serve food as attractively as you can and not in too large quantities?

Do you feed your child regularly? A child cannot go too long without food, but eating between meals means that his little stomach is overworked.

Do you find that he sleeps poorly, is irritable, has violent tempers or strange fears? If so, not only his eating but his other habits are probably disarranged.

Do you know that a child who is angry, fretful or worried cannot digest food properly? Overcome the emotion first and then let him eat.

Do you create an unpleasant scene in an effort to make him eat?

Do you create jealousy by denying to one what another child has? The child who is refused what the other children have should know why.

Do you try to show your authority by making a child eat anything just because you say so? It is better to show that you are reasonable and expect him to be; that you consult his preferences when you can, but if a food is needed for his health, he must try to learn to like it.

Do you suggest to the child your own doubt as to whether he is going to eat? A child is quick to refuse if he sees that you expect him to, and as quick to eat what is offered without question.

Care of the Child in Hot Weather

It is during the summer months that mothers should guard the health of their babies most carefully. At this time above all others "an ounce of prevention is worth a pound of cure." The increased loss of life in the hot months is due chiefly to diarrheal diseases. Milk, which is the principal article of diet, sours unless it is kept cold. Flies carry disease germs from one place to another. The heat itself makes the babies less able to resist any kind of disease. Special measures are, therefore, necessary. If the food is carefully looked after, the second summer for infants is no worse than the first.

Every baby should be nursed by its mother for at least seven months, and for ten months if possible. Breast milk is the ideal food for babies. It does not contain germs and it is fresh. It is also necessary to the needs of the growing infant. No baby should be weaned except on the advice of a physician. If the baby cannot have breast milk, and you have to have cow's milk, then buy the best milk possible. Keep the milk cold, and protect it from dirt and flies. Keep baby's milk separate from other things in the ice box.

Do not overfeed the baby in hot weather. If he is inclined to leave a part of his feeding, do not urge him to take the rest. Give the baby plenty of water. At an early age he should have orange juice every day.

Be sure that baby's skin is kept in good condition. This will help to keep him well. Give him a bath at least once a day, and if the weather is very hot, sponge him off once more. During the middle of the day when it is very hot, all the clothes can be removed except the band and diaper. Be sure that the buttocks are cleaned and dried

after every bowel movement, and do not use the diapers over again without their being washed.

Fresh air will help to keep the baby well. Sunlight does him no harm, but it should not shine in his eyes.

Find as cool a place as possible and keep him there, and cover him with netting to keep away the flies and mosquitoes.

Specific Urethritis Instructions

1. Always urinate before taking an injection.
2. Inject with one movement of the piston, at the same time grasping the end of the penis and holding the fluid in for two or three minutes.
3. Do not pass water for some hours after the injection.
4. Take at least three injections daily, morning, noon, and the last thing at night.
5. Drink large quantities of water, as many as twenty glasses daily.
6. Avoid soft drinks, "booze" in any form, spicy foods, violent exertion, and especially any sexual excitement.
7. Wash the hands carefully after injections, because if any of the discharge gets into the eyes, it may mean the loss of your sight.
8. Report regularly for medicine and, if necessary, microscopical examination.
9. Don't allow yourself to be without medicine for any time as it will set you back.
10. Don't take copaiba, sandal wood oil, cubebs, etc., as they have been found to be absolutely useless, and only upset the stomach.

R. STEWART MACARTHUR,
Los Angeles, Calif.

GALL BLADDER VISUALIZED BY TETRAIODOPHENOLPHTHALEIN TECHNIC OR GRAHAM TEST

The patient appears at the office at 5 o'clock in the afternoon. A few necessary sterile instruments, gloves and linen are provided. The patient lies down, with the left arm painted with one-third strength tincture of iodine in alcohol, extended upon an arm support. Sterile towels are placed about the arm, and fastened temporarily with sterile safety pins or towel clips. A tourniquet of rubber tubing is placed around the arm and held with forceps just tight enough to distend the veins but not to cut off the pulse. The patient clenches his fist, thus tensing the muscles of the forearm and distending the veins. A hypodermic needle, gauge 18, attached to a glass hypodermic syringe is then thrust into one of the prominent veins in the bend of the elbow, and just sufficient blood withdrawn to make sure that the needle is securely within the lumen of the vessel. The hypodermic syringe is then twisted loose from the needle and the end of a rubber tube, previously made ready and attached to a burette filled with warm Ringer's solution,[1] is attached to the needle, and the tourniquet released, thus starting at once the flow of warm Ringer's solution into the vein. We use an ordinary burette of 150 to 200 cc. capacity such as was formerly employed for salvarsan work. As soon as the flow of Ringer's solution is established, the nurse pours into the burette the solution of tetraiodophenolphthalein already prepared,[2] and this is allowed to flow into the vein, diluted by the addition of 75 to 100 cc. of warm Ringer's solution. The injection proceeds as rapidly as the gravity method permits, four or five minutes being sufficient for the injection. The dye is followed up at once by 15 or 20 cc. of clear Ringer's solution to wash out the needle and vein, after which the needle is withdrawn. The patient is then caused to lie down for fifteen minutes. The evening meal may be taken but the patient is asked to confine the diet to carbohydrates (fruits, fruit juices, sugar, rice, potatoes, lemonade), excluding fats and proteins. The patient is usually requested to go home and go to bed for the evening.

Before breakfast, at 8 o'clock the next morning, fourteen or fifteen hours after the injection, the patient appears at the x-ray department for a pair of 8x10-inch films of the gall-bladder region. These are developed at once to make sure they are technically satisfactory. The patient is then allowed to go to his breakfast, eating whatever is pleasing, but including in the breakfast milk or cream or an egg yolk. Examination might just as well be terminated within the next half hour, for these foods

[1] Composition

Sodium Chloride	90.00 grams
Potassium Chloride	0.42 grams
Calcium Chloride	0.20 grams
Bicarbonate of Soda	0.15 grams
Glucose	0.10 grams
Freshly distilled water	1000 cc.

This makes a concentrated solution. To make normal Ringer's solution: Take 100 cc. of this concentrated solution to 900 cc. of freshly distilled water and sterilize in the autoclave for 30 minutes at 15 pounds pressure.

[2] Three and one-half grams of Mallinckrodt's tetraiodophenolphthalein are dissolved in 25 or 30 cc. of properly sterilized Ringer's solution, and boiled on a water bath for 15 minutes.

Gall Bladder Visualized

in the breakfast will cause a contraction of the normal gallbladder; but it is our custom to let the patient return at 12 o'clock for two more films. We thus have four films, two made at the fourteenth hour, before breakfast, and two at the eighteenth hour, approximately three and a half hours after a breakfast containing fats.

DR. JAMES T. CASE,

Battle Creek Sanitarium.

From *Victor Service Suggestions.*

SIXTY YEARS IN PRACTICE

I received my medical training before the days of six-year medical courses. Although my studies occupied six years it was not in a medical college but reading and practicing with an old doctor.

In October, 1866, I came out into Michigan and located in this "new country." During my first year of practice I *walked* 2,500 miles, over trails made by the Indians and the settlers, to visit the sick people. I remember there was an epidemic of "bloody dysentery" that year and I treated sixty-four cases, with only four deaths.

I have had a large and successful obstetric practice, having delivered about 2,200 women without having lost a mother as the direct result of the confinement or due to causes that I could control. Of course, a few have died from eclampsia and things like that.

In 1882 we had an epidemic of diphtheria, of which I treated 117 cases and lost 27, which was considered an excellent record in those days. During this time I was in the saddle most of the time for twenty-seven days. During one period of three days and nights the only sleep I had was what I took on the back of my horse.

I am considered a good diagnostician and accurate in my prognoses.

I love the practice of medicine and am still in harness, though I will be 85 years old next November. Everybody says I am an unusually active man for my age, and while I do not do much night driving any more I have a good office practice.

The best wish I can make for my brother physicians is that they may live as long, active, busy and Christian a life as I have lived and be as hearty at my age as I am.

THOMAS H. MAYNARD,

Clare, Mich.

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[It is hard for most of us to realize the kind of things our older brothers in the profession went through. We have all sorts of helps to fall back upon and professional friends to call in time of emergency. They fought their greatest battles alone and unaided and *triumphed* by virtue of their sound, all-around medical knowledge, their inborn and highly developed common sense and a splendid equipment of guts.

All honor and power to the men who broke a path into the wilderness to carry the benefits of our glorious profession to the sick and suffering!

May we who follow in their footsteps be granted wisdom, grace and strength to make as good use of our equipment and powers as they made of theirs!—ED.]

THE DECOMPENSATING HEART AS A SURGICAL COMPLICATION

In the days before anesthesia, the decompensated heart was regarded as THE great surgical complication. Modern surgery has little to fear from the old type of heart shock, but the heart presents a more serious surgical problem today than ever before. Foremost among the reasons for this is the fact that surgery is handling a wider range of cases today than ever before, including patients of all ages and in all degrees of illness, which presupposes a like increase in the percentage of decompensating heart cases surgically treated.

Surgical heart complications have been grouped for consideration in various ways —according to their peculiar type, to the length of time they have existed, or according to their degree of disability. The latter is perhaps the most popular classification, and groups all surgical cases under three heads; those with normal hearts, those with slightly damaged hearts, and those showing extreme decompensation. Such a method of classification would be of more practical value to the surgical world were it not for the grouping of all clinically negative hearts under the optimistic heading, "normal." It is impossible to determine before operation whether or not the heart is going to prove to be the ideal normal heart. Until some way is found to measure the resources of a heart under untried difficulties it will be impossible to know what the heart will mean as a surgical risk. Because of this uncertainty in diagnosis, it is well to group all operative cases as actual or potential heart risks.

Physiologically, decompensating hearts are of two kinds, valvular and myocardiac. Both offer serious handicaps where surgery is involved, the myocardiac type ranking as the greater source of surgical risk because it is more common. This is the type of heart that has been poisoned by infection, specific or otherwise, and is associated with the empyemas, infected gall-bladders, mastoids, thyroid intoxications, nephritis, nephritic abscesses, intestinal obstructions and the like. It is especially prone to follow in the wake of chronic infections.

If surgical intervention is indicated, justice to the patient demands that operation be performed, no matter what the evidence of heart involvement. The physician is but a poor friend to his patient if he refuses to operate on the cases needing operation. He will doubtless show a remarkably low mortality on surgical records, but the River Styx will show no diminution in its one-way travel. In many instances operation offers the only chance for ultimate recovery, for the heart disorder cannot be corrected unless the source of heart infection be removed. The factor to be eliminated in heart cases is not the surgical intervention but the heart risk.

Rest, proper feeding, proper exercise, blood transfusions, injections of glucose and similar routine procedures have been widely recommended for preparing the decompensating heart for surgical intervention. It had been my experience that these measures have little effect in building up the heart muscle until after the source of heart poisoning is removed. If there is time and opportunity to give the heart a rest and to build up its general tone before operation, it should by all means be done, but cases that can be so handled do not come properly under the head of decompensating hearts as surgical risks, except of the potential type.

The chronic hearts of the myocardial type that resist correction, and the surgical cases that come as emergencies, giving no opportunity for improvement of heart tone, are the real heart complication cases. Blood transfusions and glucose injections are extremely unreliable, and they often do more harm than good. The safest preoperative procedure, so far as the heart is concerned, is to let it alone as much as possible, for the less it is given to do the better it gets along.

The dangers of surgical intervention to the decompensating heart case are due to three factors: to the heart disability, the surgical manipulation of tissues and to general anesthesia, the latter being the greatest single source of danger. Upon the surgeon's choice of an anesthetic in these cases rests the success or failure of the operation, and the decompensating heart patient should have local anesthesia unless there is some very positive contraindication.

There is practically no type of surgical intervention that cannot be performed upon the human animal under local anesthesia as well, and with greater safety to the patient, as under general anesthesia. The recuperative power of the heart is tremendous if the source of its infective poisoning can be removed without substituting for this bacterial poison the poison of narcotic intoxication. This, local anesthesia furnishes the means of accomplishing. I believe that surgical mortality can be made to approach zero, even in heart cases of every type, by the use of local anesthesia.

JAMES J. MONAHAN,

From *Bul. Chicago M. S.*

ULTRAVIOLET THERAPY
(A Reply to Dr. Spitz)

The communication from Jacob Spitz (CLIN. MED., Aug., 1926, p. 575) is interesting and, on the whole, no doubt is intended to encourage the use of ultraviolet radiations in medical practice.

There are some statements in this paper, however, to which I am compelled to take violent exception. The author states, "the ultraviolet ray is not a specific in any way for any condition." If we take the dictionary definition of a "specific," namely, a remedy that has a positive, curative action in removing the primary cause of a disease, then, I am sure this statement is not in accord with the clinical and experimental evidence.

It has been shown, for example, in tuberculosis and rickets, that the physiologic effects of the rays is such as to correct deficiencies responsible for these diseases and that, clinically, the response to this form of therapy is so positive as to bring about results that are impossible under other conditions. It is, of course, possible to quibble about academic considerations, but from a practical standpoint we cannot permit such a statement to go unchallenged.

There is evidence that the findings in this paper were reported in a hasty way as, for example, the direct contradiction in classifying peptic ulcers as a disease that is in no way benefited by this form of therapy and in the succeeding paragraph placing this among those conditions in which it may be of benefit.

To say that ultraviolet rays are of no benefit in hay fever and burns is, in my mind, utterly ridiculous. One is, perhaps, justified in making the statement that such has been his experience, but to ignore the experience of men who are just as competent in clinical observations as the author and whose veracity is unquestionable, certainly does no credit to the judgment of this writer. There is, of course, room for differences of opinion as to the positiveness and the value of the results obtained in a variety of diseases, but when one in the same breath states that there is a probable benefit in ringworm and sciatica and then reverses himself and states that it is of relatively great value in ringworm and nerve disturbances, what conclusions can we form as to the serious consideration he has given to his statements?

I have no wish to be drawn into any controversy in this matter, but I do think that in a matter of such vital import to the progress of medical practice such communications should be more critically examined before being submitted for publication. I do not expect everyone to agree with me in my opinions on the merits of ultraviolet therapy. I do, however, expect such opinions to be accepted in good faith and to be respected as at least an honest endeavor to arrive at the truth, so long as they are accompanied with some evidence to substantiate them. This paper referred to expresses only opinions without any evidence bearing on the competency of the author to submit conclusions.

G. J. WARNSHUIS,

Milton, Wis.

TAKE YOUR OWN ADVICE

At the Seventh Councilor District Meeting last month a criticism was made of the medical profession; a criticism so much to the point that it deserves the widest publicity.

Following a discussion on Periodic Examinations of apparently healthy persons, it was asked how many physicians present had been examined within the past year. *Three in seventy raised their hands.*

We heartily indorse the subsequent plea to those members, and to all physicians, to have such examinations made. As was so well pointed out, hardly a month passes but what some physician, dear to his friends and apparently in the prime of his life, suddenly drops from the ranks.

An hour a year may add "life to years and years to life." Take the time *today;* not tomorrow.

—*Wisconsin Medical Journal.*

LOBELINE SULPHATE IN THE TREATMENT OF TETANUS

I desire in this article to call the attention of the medical profession to the effective use of lobeline sulphate in the treatment of tetanus.

I do not regard the use of tetanus antitoxin as being of any value whatever after the onset of the disease; but lobeline sulphate, given hypodermically, is a drug of real value in the treatment of this dread malady and an agent by the use of which recovery can be confidently looked for, at least in most cases.

Under ordinary forms of treatment, as is well known, tetanus is almost universally fatal. I therefore trust that data in regard to the use of lobeline sulphate will be thankfully received.

Generally speaking, in an adult case of tetanus which has progressed to the stage of trismus, opisthotonos, rigid muscles of the chest and abdomen, and cramps in the

limbs, the dosage of lobeline sulphate should be 1/200 to 1/100 grain, hypodermically, every hour for five or six doses or until there is a noticeable amelioration of the symptoms. Then give a dose at two-hour intervals, continuously, during the active stage of the disease. Do not hesitate to give 1/50 grain doses if the case requires it. The effects of the drug are quite transient and the dose should be given at not more than two- or three-hour intervals.

The use of such general measures as each individual case demands should be instituted, but no depressing agents used. Liquid nourishment, moderate elimination, darkened room and quiet, and daily sponge baths are beneficial. Elixir valerianate of ammonia, in teaspoonful doses, repeated at two-hour intervals, will help to lessen the exaggerated reflexes.

Do not expect immediate or complete relaxation of the affected muscular groups nor complete cessation of the spasms and cramps, but be satisfied if you hold these conditions in abeyance and moderation, to the point of endurance on the part of the patient. Give the lobeline sulphate to the point of keeping the patient fairly comfortable, and wait. In due time, from the use of this drug, you can look for the tense muscles of the jaw to begin to relax, swallowing to become less difficult, the opisthotonos to yield, the cramps and spasms to occur less frequently, and to become of less severity.

Continue the lobeline sulphate as long as the muscular rigidity, spasms and cramps occur, even though mildly.

If, during the malady, a sudden severe paroxysm should occur, do not lose hope, but increase the dosage of the lobeline to effect.

Insist on a trained nurse being constantly in attendance. Watch the case closely. Control the spasms and cramps until the system has had time to manufacture its own antitoxin.

Do not give opiates unless urgently needed. An occasional dose may be indicated to produce needed sleep, or in case of severe distress in the region of the heart.

After the general improvement in all the symptoms there will be an indefinite period of reconstruction. The attending physician should give the case close attention until recovery is complete.

Lobeline sulphate, given hypodermically in tetanus, does not depress the action of the heart nor the respiratory center; does not cause vomiting nor nausea. In fact, it has no noticeable bad effect whatever.

Use a reliable drug and always give it hypodermically. (The tablets that I have used were obtained from The Abbott Laboratories, North Chicago. I have found them dependable and effective. I keep a supply on hand.)

The action of lobeline sulphate and the toxin of tetanus appear to be directly opposite. When given judiciously in tetanus there appears to be no danger from the liberal and continuous use of the drug. Its action is not cumulative.

We may add that the primary wound or depot of infection should receive thorough attention if it needs it; but in many instances the antecedent wound, where the infection took place, was of so slight and trivial a nature that it has already healed, and it is only by the closest questioning of the patient that its history can be gained.

F. D. HULBURT,

Reedsburg, Wis.

DIABETES AND HYPERTHYROIDISM*

A patient may feel "nervous", or "peculiar" or have pains of more or less severity in various parts of the body, and if we fail to find any definite abnormality after a rather cursory physical examination, we can say, "hysteria or nerves" and be right most of the time. But, when a man who weighed 150 pounds three months ago, comes in today weighing 120 pounds we know that something is seriously wrong with him, physically, and that it must be looked into.

Most prominent among the conditions attended by rapid and considerable loss of weight are tuberculosis, malignant disease, diabetes and hyperthyroidism. The first two are usually susceptible to diagnosis without great difficulty and do not enter into the present problem.

The loss of weight seen in diabetes and hyperthyroidism is due to entirely different causes.

The diabetic suffers from a definite crippling of the apparatus by means of which he burns (oxidizes) his food. No matter how much you give him to eat he can never hold his own because the carbohydrates (into which most foods must be converted before they can be utilized) drain away through his kidneys before they can be assimilated.

*Abstract of a lecture by Dr. Robert W. Keeton, Chicago, delivered at the West End Hospital, Chicago, September 23, 1926.

He is starving to death—with all the chemical changes found in starvation—in the midst of a feast. His metabolic rate is almost always below normal.

The hyperthyroid patient, on the other hand, has no trouble in metabolizing his food. In fact, he burns it up much faster than normal, as is shown by his high metabolic rate. Nutrition, with him, is merely a matter of stoking the furnace fast enough and generously enough to make up for the fury with which the body fire is burning. If you give him *enough food*, you can make him gain in weight; but this may require 4,000 or 5,000 calories a day.

If you give the diabetic enough insulin to burn his carbohydrates he will gain weight upon a diet of the proper caloric size to maintain a normal man; and if you treat his case so as to restore his metabolic apparatus to reasonably normal fuction and stop the loss of sugar he can hold his own as well as anyone on the normal diet of 30 calories per kilo of optimum body weight per day.

In treating cases of diabetes, it is well to bear in mind the fact that it is not so very uncommon to find the same patient suffering from hyperthyroidism. Then. again, in addition to this combination of two distinct diseases, there is a type of glycosuria which is the direct result of hyperthyroidism and is not true diabetes at all.

We do not need any kind of a machine to arrive at a rough and practicable estimate of a patient's metabolic rate. If he is losing weight and you start to increase his diet in order to stop the loss and find that it takes from 60 to 75 or more calories per kilo to make him gain, you may be sure that his metabolic rate is above normal and look out for hyperthyroidism.

If your patient seems to be primarily a diabetic and is losing weight because of starvation, you will give him insulin until his urine and blood are sugar-free, and then begin to feed him to restore his weight. If the normal 30 calories per kilo do not produce the desired result, and he remains sugar-free, you go on increasing the diet. If it takes from 50 to 75 calories per kilo to stabilize his weight you may be reasonably sure that you are dealing with hyperthyroidism and act accordingly.

Diabetics are notoriously nervous and unstable and a mental shock or psychic trauma will frequently cause a reappearance of sugar in urine that has been free for days and weeks. For this reason the patient's subjective symptoms are an insufficient index of thyroid involvement and we must rely upon the metabolic rate, as determined by laboratory estimation or the clinical test just described for our diagnosis.

The cases of hyperthyroidism associated with diabetes almost all improve upon properly regulated doses of Lugol's solution of iodine and potassium iodide. Surgery should be resorted to as soon as the patient's condition is sufficiently favorable.

G. B. L.

AIR

If you are blue, try Fresh Air.

If you are sick, try more Fresh Air.

Fresh Air is not a discovery of today or yesterday—it is as old as the world.

Fresh Air enters the lungs when LIFE begins and LIFE ends when it departs.

Two lungs full of Fresh Air taken sixteen times a minute is the best medicine on earth.

Disease germs do not like Fresh Air. Don't blame them. Nobody likes that which kills him.

The Fresh Air treatment keeps the fires of life a-burning and is all that stands between you and Eternity.

Buffalo Sanitary Bulletin.

PREVENTION OF DIPHTHERIA

At the third annual meeting of the American Child Health Association, the following resolutions relative to the control of diphtheria were adopted:

WHEREAS, ten thousand lives are sacrificed needlessly from diphtheria in the United States each year, 90 percent of which deaths occur in children under five years of age, and

WHEREAS, science has now given to us a means whereby complete protection against this disease may be secured by the administration of toxin-antitoxin, with the result that the vast majority of people so immunized would never contract diphtheria, even though exposed to it, and

WHEREAS, ten years of experience have proved the entire practicability of eliminating diphtheria from a community by widespread immunization of school children, and more particularly of children from one to five years of age, therefore be it

RESOLVED, that the health workers of the nation assembled in the American Health Congress, with the best interest of the children of America at heart, strongly urge upon the attention of the people of the United States the opportunity thus afforded

them to banish diphtheria as a menace to their children, and be it

RESOLVED, that this Congress urge upon the fathers and mothers of the land that they seek this protection for their young children either from their family physician or by taking advantage of the immunization service afforded by boards of health, clinics, health centers and boards of education, to the end that diphtheria may be eliminated from the United States.

OBTAINING THE FEMALE URINARY SPECIMEN

I can readily imagine that, if the examiner is embarrassed and is all in a flurry about asking a lady applicant for a urine specimen, there will be some difficulty in getting it, and a strained situation will be produced. If there is such embarrassment and confusion on the examiner's part, and as a result he has difficulty in securing the specimen, or fails to secure it, it is his own fault. I say this quite dogmatically, because in the course of thousands of examinations of female patients, for insurance and health work, and in private practice, I have never experienced any difficulty in having a urine specimen passed right in the office, in a single case.

If "to the pure all things are pure," the reverse also holds. If the examiner's mind is filled with all of the parabolic suggestions incident on passing a urine specimen in the office, his female patient will sense it somehow; and he will be up against a frigid obstacle when he wants his specimen. On the other hand, if to him, the obtaining of a urine specimen means no more than a piece of daily routine, nothing different from the rest of the examination, his lady patient will think absolutely nothing of complying with his request for a specimen.

In the case of private practice, I often ask the female technician to arrange for the passing of the specimen; but even this is not always practicable, as the technician may be busy on more important work, or off duty. Therefore, I leave a receptacle in a closed room, and ask the patient to retire into that room, and to return to the consulting room when she is through. The specimen can then be handled entirely out of her sight, which I prefer to do on account of courtesy rather than of prudery. In the case of insurance examinations, the procedure is still simpler; the entire examination can be finished, the signature obtained, and then the patient asked to retire into the room in which the receptacle is prepared; and from there she can pass out into the hall, and need not see me any more.

From my own experience, I fail to see any reason or excuse for failing to get a urine specimen from any female applicant, right in the office, so that the examiner is able to state definitely of his own knowledge that the specimen was passed by the applicant.

MILES J. BREUER,

In *Med. Ins.*

SUMMER AND WINTER SUNBATHS FOR BABIES

Pigmentation or tanning of the skin and not sunburn is the end for which to strive in giving sunbaths to babies. No absolute rule can be laid down as to how long this will take. The baby with fair skin will require shorter exposures at first in order to avoid sunburn, but may be given more frequent sunbaths, possibly twice or even three times a day in order to hasten pigmentation. The baby with dark hair and dark skin will pigment more rapidly and longer exposures can be safely given. Negro babies may have twice as long exposures as white babies. Older children can usually have longer initial exposures than young babies. A general schedule such as this may be followed fairly closely, but no schedule will serve for all babies, and common sense must be used at all times to avoid sunburn.

During the spring months sunbaths are best given between ten and one, but during the hot summer months they should be given earlier in the morning between eight and eleven. Once the child's body has become well tanned he can play in the sun several hours, provided he wears a light cotton shade hat. During the extreme heat of July and August it is better that the child should play in the shade between eleven and three. A child accustomed to complete sunbaths in the summer can continue them late into the fall and can have partial sunbaths on all sunny days in the winter. Outdoor sunbaths may be started as described at any time during the spring, summer, or fall, but the duration of these initial exposures must depend on the season, those of the spring and fall being longer than those of July and August.

In the northern states during the winter months from November to March it is often

difficult to give outdoor sunbaths to very young babies. The heat of the sunlight which we would so gladly dispense with in July and August must be used to its greatest extent in winter and spring. It has been found that the temperature in winter may be forty or more degrees higher in the direct sunlight in a place protected from the wind than in the shade. Babies born in the winter should sleep as often as possible outdoors in the sun during the morning nap and the sun be allowed to shine on the cheeks and face. During these months, moreover, partial sunbaths may be given to babies indoors lying inside an open window. The window may be opened at the top or at the bottom, but it is important that the baby lie in the patch of sunlight which has come through the open space. During the indoor sunbath it is best to close the doors of the room to avoid drafts. The same technic may be used for the indoor sunbath as for the outdoor. Babies who have become accustomed to indoor sunbaths in winter can begin outdoor sunbaths in February or March.—*Children's Bureau, U. S. Department of Labor.*

USE OF TESTICULAR EXTRACT IN TREATING A WOMAN

I have recently had a remarkable experience in the effects of glandular therapy.

The patient was a woman 62 years old, who was suffering from that complex of symptoms ordinarily called neurasthenia. Her case resisted all of the usual methods of treatment which I tried and I decided to make an experiment.

I gave her intramuscular injections of 1 grain of testicular extract, in the gluteal muscles, every other day for two weeks. I then gave similar injections once a week and between treatments administered 1 grain of the extract by mouth, three times a day, before meals. This was continued for twelve weeks and was the only treatment used, except an occasional laxative. There was no elevation of the blood pressure during the treatment.

This patient ceased to menstruate at 50 years of age (twelve years ago). She was thin and in a run-down condition and complained of frequency of urination.

After the fourth injection of the testicular extract she began to gain rapidly in weight and her appearance improved very markedly. Her subjective symptoms also improved in a surprising manner and she said she "felt fine" all through the treatment.

At the end of three months' treatment she began to menstruate regularly and soon after this she became pregnant and seems likely to give birth to her child in a normal manner.

At the present time she has, except for her gray hair, the appearance of a woman 25 or 30 years of age. Her face is plump and smooth. Her urinary difficulties have entirely disappeared. She sleeps well, can do a heavy day's work without fatigue, feels as young as she looks and is again interested in many things which had ceased to arouse any enthusiasm in her for years before the treatment was begun.

G. M. FISCHER,

Chaneysville, Pa.

[This is, indeed, a most surprising report. It seems hardly likely that such results could be expected with any regularity, for the administration of testicular extracts to women is by no means a wholly new procedure, but that it can happen, even exceptionally, should be enough to suggest the trial of such therapy, in properly selected cases, as there can scarcely be any danger of untoward effects, even if the treatment proves valueless.

If any of our readers have had experiences at all similar to this we shall be glad to hear of them.—ED.]

GAS HAZARDS ENCOUNTERED BY EVERYONE

Almost every individual in his daily life is subject to possible danger from asphyxiation, by fire or explosion due to one or more of the combustible gases used for the production of light, heat, and power. Any combustible gas or vapor, when mixed with air or oxygen within certain limiting proportions, will explode on ignition. The violence of the explosion varies with respective proportions of air and gas, and with the degree of confinement of the mixture.

Carbon monoxide is a major constituent of water gas, producer gas, blast-furnace gas, and coal gas. Automobile exhaust gas contains 3 to 12 percent of carbon monoxide. Pure carbon monoxide is colorless, tasteless, and odorless. It has practically the same weight as air. Like the copperhead, it strikes its victim without warning. Very low percentages, such as 0.1 to 0.15, if inhaled for one hour or more often give

a characteristic warning headache, but higher percentages usually render the victim unconscious without warning.

Pure natural gas contains no carbon monoxide, therefore small gas leaks do not cause poisoning from carbon monoxide as is the case with manufactured gas. The principal hazard in the domestic use of natural gas is from carbon monoxide created by incomplete combustion in poorly designed room heaters. Even well-designed heaters are dangerous when improperly used. A gas heater with lava tips and free-burning, yellow flames does not give off any carbon monoxide when the flames burn freely in the air without touching any metal surface; but if the burner tube is turned from its proper position so that the flames impinge on a metal surface, enough carbon monoxide will be formed to cause asphyxiation in a tightly closed room in thirty minutes to one hour—that is, if the heater has no flue connection.

If gas heaters must be operated without flue connection, windows should always be left open to ventilate the room. All gas heaters and stove connections should be solidly piped. Rubber-tube connections are always a fertile source of danger. The public generally does not appreciate the danger from gas leaks. Many disastrous explosions in basements of buildings that are attributed to blackhand bombs or other mysteriously placed explosives are found on investigation to be caused by gas accumulations from leaks or burners that have become extinguished by drafts.

Coal gas is more easily ignited and tends to form explosive mixtures more easily than natural gas because of its high hydrogen and carbon monoxide content, both of which have a much broader range of possible explosive mixtures when mixed with air, and have higher rates of flame propagation.

Carbon monoxide is also the poisonous constituent of automobile exhaust gas, the average content being 6 to 7 percent. It is suicidal to run an automobile engine in a closed private garage for ten minutes. By actual experiments at the Bureau of Mines, dogs became unconscious after a motor was run ten minutes in a single-car garage, with the doors and windows closed. Garages in which repair work is to be done should have good ventilating systems. It is a good plan to connect a hose or pipe from the muffler vent to the outside of the garage. There is no danger to the user of benzol blends for motor fuel, excepting the usual carbon-monoxide hazard in the exhaust.—U. S. Bureau of Mines.

DOCTOR, GO THOU AND DO LIKEWISE!

A well-known Cincinnati doctor was recently "posted" at his club for nonpayment of his account.

After thinking it over, he decided that this "posting" idea was good—an idea that he could make use of. Debtors flee publicity. The limelight of public censure brings out the timid shekels.

Accordingly, the Cincinnati medico, with malice toward all, and charity to none, prepared a typewritten list of those members of his club who owed HIM back accounts; typed the names, dates and amounts neatly; AND THUMB-TACKED IT ON THE BULLETIN BOARD!

He headed it, "What's sauce for the doc is sauce for the ducks—that don't pay," and then wrote, "If the following club-members will come through with what they owe ME, perhaps I can pay MY house account, and a few other pressing bills!"

There seems to be much merit in this suggestion.

ED.

The Leisure Hour

Conducted by GEORGE H. CANDLER, M.D.

The Great Delusion

THEE remembers the old Quaker who said to his wife, "Everyone is crazy except thee and me—and sometimes I have my doubts about thee". That man had a judicial mentality, marred only by the one delusion that he, himself, was perfectly sane. His wife, had she gone on record, would probably have told us differently. So I, perfectly aware of the fact that my mental processes are ever so slightly irregular, venture to state that *Homo sapiens*, as we find him today in this "Land of the Spree", is wiser in his own estimation than in that of his fellow sufferers. We *all* have delusions—and are deluded, delightfully or disastrously, as the case may be.

Some only partially paretic philosopher once said, "Pity the man who has no *ill*usions" (we *do*), and another remarked, "We hug our delusions." In other words, we like to think that things are not what they really are. Most of us certainly do that very thing: some of us "in season and moderation", others—still outside of institutions—all the time and voraciously! Were it not for this fact the vendors of certain "light sixes", freak radio receiving sets, stucco bungalows, overstuffed parlor sets, etc., etc., would be minus a clientele and have to work. They and others of their ilk, at least, have no illusions as to the gullibility of their fellow men. How *could* they have?

Unfortunately, about eighty percent of the population has both *ill*usions and *de*lusions—in other words they see what does not exist and suffer from mental error to the extent of more or less permanently harboring mistaken convictions. Now and again they wake up and *think*: the result being that someone gets painfully kicked, or some erstwhile cherished thing is hurried to the junk pile.

It would appear at this particular time as though a whole army of temporarily deluded people were about to burn their hoods and robes and make it a weird, woeful time for the witches, wizards or what-have-yous. Verily, the knell of the Kleagle klangs klamorously through the Klaverns and the keepers of the kists are kissing the kash a fond adoo. The Klan has kraurosis and the Kidders are knuckling. Kismet! (By spending an hour with "my old college chum", Noah Webster, I could akkumulate a lot more K's but I'm not *Krazy* about them anyhow.)

Right at this point some delusionist will arise on his hind feet and charge me with being a K.O.C., unpatriotic and (perhaps) idiotic. I cherish the conviction that I am none of these things. I *am* free, white and of a long protestant lineage; I love my country and am mentally acute enough to get by in fairly high-brow society. I have, however, as I acknowledged earlier, a few *ill*usions and chief among them is a dislike to bunds, masked mobs and oath-bound oafs. I do not fail to recognize kuite klearly the supreme egotism of the wizards who wind up the machine and know intuitively that when (if) it whizzes, a lot of quite inoffensive people will get "what-for". On the banks of the Wabash (and elsewhere) they *have* been "getting it" and now are slowly awakening to the fact that the pain in the gluteal region of a portion of the citizenry is due to repeated applications of a large invisible boot. The boot was made of home-grown material but by imported craftsmen; kept more or less "invisible" by wizardry, and was worn on the wrong foot of the community. Now the honest-to-goodness shoe on the other foot is kicking hard to rid the body-politic of the objectionable clog and hereafter the tracks of high office holders in the Hoosier state may be less lopsided.

It is not the idea to consider here the merits or demerits of any individual, nor to pass judgement upon conditions as they seem to exist. The point is merely this: can *any* oath-bound body of men possess the power of recruiting generally from the masses, keep their real aims secret and function unconstitutionally while professing undying allegiance to the constitution, without sooner or later endangering that very FREEDOM they claim to uphold? Calm

consideration of the oath administered to prospective Klansmen proves it to limit their freedom, not only of action but of thought, very considerably. The Constitution of this United States does *not* do that. It is something which any free white man can wholeheartedly support—without the possibility of injuring any fellow citizen while doing so. The Klan oath, on the contrary, fosters bigotry, always a dangerous, conflict-breeding thing), secrecy, mystery and klan spirit —the last especially undesirable in a country where "all men are free and equal"—not yet in reality, perhaps, but *under the law.*

The Klansman lays great stress upon respect for the chasity of women. Some of their "Dragons" seem to devour them. The good Klansman must preserve the secrets of another Klansman, provided they do not reveal "rape, malicious murder or treason." What *is* malfeisance in office or political corruption but TREASON? If there is any country in the world where (heretofore, at least) the woman who wishes to be chaste *can* be so, we have it. I have yet to learn that the Catholics of the United States make undue attempts to seduce ladies of Protestant leanings. As a matter of fact, I am inclined to think that they teach chastity to their children a little more effectively and assiduously even than we Protestants do. This may, of course, be a delusion, but long years of observation have failed to dispel it.

Further, until one portion of the population holding a certain religious belief really aggressively reaches out for temporal power, what business has any other portion to band itself for active opposition and teach "malice, hatred and all uncharitableness"? Would such procedure be conducive to brotherly love and harmony? Would it not, indeed, be merely human for the other portion to also band and more actively prepare for possible eventualities? Would not two such oath-bound parties soon have to meet head on? And would this country, or "innocent bystanders" therein, (and there are millions of them) benefit in any way by such a collision? These are the basal problems which require solution. To be rendered hysterical and delusional by listening to lecturers with limpid larynxes is to be rendered unfit to reason—and no knotty problem was ever solved satisfactorily by the irrational or ill-informed.

Long ago a very close friend invited me to become a Klansman. I asked him why, and he then and there spread before my eyes a document which he solemnly stated was the oath taken by certain non-protestant Knights. It contained blood-curdling promises to (upon orders) dash out childrens' brains, level homes and utterly destroy everything and everybody who worshipped the Almighty in a different fashion to that of the swearee. I asked my friend if he really believed that sane, decent, educated and generally civilized Americans were taking such an oath and he, with tears in his eyes, convinced me that he *did* think so. He had been *told so*; he had been warned that unless he paid his dues, donned a white pillow-case and kow-towed to some Klangel or Kloogle he and his would, sooner or later, be devastated. His women would be ravished and his children, born or yet unborn, would be thrown violently against the walls or pavements by erstwhile neighbors. In short, half our population would, all of a sudden, revert to savagery and gobble up the other half. That half, however, if banded and prepared, *now*, would manfully and heroically fight back and try to bang the other fellows' heads against walls, etc., etc., first! Wonderful propaganda, woeful delusions—and *now*, gaze down into poor Indiana! The time evidently to have sat down upon the K.K.K. was when it was in the egg!

Numberless ordinarily rational men fell for the fiery cross, the patriotic brotherhood and "freedom" of everything without realizing that the oath of allegiance rendered them forever slaves of the Klan. They vowed to do the bidding of the Supreme Wizard (I congratulate the Wiz. on selecting that title) at any time, at any place and to sacrifice property or life if necessary. They must have regarded the S. W. as a superwizard indeed! As a matter of fact, both he, his Kleagles, Dragons *et hoc genus omne* are very ordinarily gifted with intelligence but amply endowed with egotism and possessed of a very pretty idea of taking care of themselves—through their adherents.

The "old original" Klu Klux had some excuse for at least temporary existence. According to Webster, it was a "secret society whose object was, apparently, to prevent negroes or Northerners from gaining ascendency in the South. The organization *warned, expelled, whipped,* or *murdered persons obnoxious to it* but was finally broken up by the United States military forces." The same United States military forces could—and would—just as promptly quell any uprising of citizens which by any stretch of the imagination might take place

either today or twenty years from now. It would *not* need the assistance of any masked members of an opposed secret order. The Klansman may tell you that he fears greatly that in time the number of his "natural enemies" in high places will have increased so greatly that the arms of the Nation may fail to function in his (and your) behalf when the catastrophe occurs. To overcome this possibility he wants at least *most* of the offices held by "his side." Under such circumstances he is sure everything would work out beautifully. The Soopreme Wiz would wave his wand and Army, Navy and Air forces would instantly eat up every slightly tinted or scapula-bearing individual in sight. That some people at least would in the long, long interim fail to get a fair show and that the force of the Klan would be utilized for ulterior motives by sharp-witted but unscrupulous Kleagles is something that doesn't seem to matter particularly.

But—gaze sympathetically into Indiana! *There*, my brethren, is a spectacle to make even half sane men laugh and the gods weep! And what has been partially revealed in Indiana exists all about you—wherever you may be situated when you read this.

Such conditions would not, could not exist were we not all prone to harbor delusions. We will *not* think things out. Some one gets up and lets the wind blow mellifluously through the place where the whiskers used to wave, and we shortly get up and yell and "sign up" like a lot of nincompoops! So asinine are we, when in herd, that even the other asses who bray to or at us hee-haw at our stupidity. Laughing or crying, however, they always take what they can get us to surrender—and by and large, we surrender very large sums. THAT'S no delusion, either. Think it over.

I have no quarrel with any Klansman, neither have I any with a member of the K. O. C. I do know that for years I have lived upon the most neighborly terms with Catholic families and I haven't the slightest doubt that several of my daily associates wear white hoods upon occasion. I have to confess, however, that, whereas the one side makes threats and hints at the potency of "masked visitations" (an idea I detest), the other extends a helping hand whenever occasion demands and goes upon its way worshipping as it has been taught to worship and generally minding its own business.

I am reminded occasionally that "history repeats itself" and that the Church of Rome has always exerted or tried to exert Temporal as well as Spiritual power. There is, in this country, no longer any possibility of such a condition. Church and State are and will ever remain separate. To the really intelligent "good citizen" (not embracing here ward-heelers or precinct leaders), it makes no manner of difference whether the men who guide our ship do, or do not believe in transubstantiation. If your mother had taught you the Catholic faith, you would probably adhere to it the rest of your life. On the other hand, were you born and bred in the Protestant faith—or even a Doweite —you would stick tightly to *that* belief. We all have our illusions and some of them should not be dispelled. BUT, if your faith in the existence of the Almighty is not misplaced; if your whole religious beliefs are worth one little tinker's dam (no *n* here, please), then you, no matter what your creed, cannot harbor hatred of your neighbor in your heart, or take any step—even of the most preparatory nature—to work injury upon him. You cannot do this thing either as a God-fearing individual or as a 100-percent American. Five minutes real thought and you will have to acknowledge that there is no need for an "Invisible Empire", and that its existence is in reality a deadly menace to the very principles you would keep inviolate. Ponder over that a while—and you'll burn your pillow case—turning your face, meanwhile, away from Indiana.

It is unfortunate that men have not yet grown up sufficiently to be able to resist very vigorously the lure of uniforms, flowing plumes, tin swords, pass-words, grips and all the paraphernalia of the "secret society." A host of these exist and perform a real service. Men meet there, learn to express their opinions in order and contribute as a whole to a fund which provides something at least towards the support of the sick of the order or their dependents should they (as each one must) "pass over". These are *bene*volent societies and must be sharply differentiated from those which really are *male*volent.

That uniformed lodges exist does not mean—even though they drill and carry ineffective swords—that the order plans to arise some night at some mysterious bidding, to slay and utterly destroy people who don't think just as they do. It merely means the love of the male for display. The peacock spreads his tail before the hens of his harem; the turkey gobbler almost bursts himself trying to impress his females; and

most men feel that they are very martial and totally irresistible when they march in resplendent uniform behind a brass band. The men like it; women *love* it, as also they love the mystery of "the lodge", but no one is harmed thereby and I am reasonably sure that none of the plumed knights have murder in their souls. The possible deadliness of the "Uniformed Ranks" may be classed as a *delusion*. The members at least show their faces and parade—swords and all—*pro bono publico*. It may be rather silly, but it is NOT sinister.

The gist of the whole thing is this. Don't be too easily deluded. Do your own thinking and being—or desiring to be—free and the equal of any other man, keep out of anything which even theoretically can limit your freedom of action or thought or would attempt to deny that same freedom to any other decent citizen of this country. Here, at least, race and religious bigotry are moribund. Those who would attempt to revive either are delusionists and public enemies.

Finally, gaze once more, if you please, at Indiana. If one Kleagle could do that to one state, what could a dozen Super-Dragons do to the old U. S. A.? Just to *think* about it, Mawrus, gifs me a head yet: what?

Signing off now. Good night.

G. H. C.

A schoolboy, instructed to write an essay on the subject, Man, submitted the following:

"Man is composed of three parts, his cranium, his borax, and his abominable cavity. In his cranium are his brains, if he has any. In his borax are his liver and his lights. In his abominable cavity are his vowels, five in number, a, e, i, o, and u."

Will—"I've found a wonderful dentist. Every time he extracts a tooth he gives his patient a drink to stimulate him."

Joe—"Then what are you so gloomy about; did he run out of hootch?"

No I ran out of teeth."—*Progress.*

On a gravestone in a cemetery in Burlington, Vt., is the following ambiguous tribute to a woman of that city, who died in 1833:

"She lived with her husband fifty years, and died in the confident hope of a better life."—*Progress.*

UNIVERSAL

Ikey and Izzy were separting after an evening together, when Ikey said:

"Au revoir."

"Dats goodbye in French."

"Vel" said Izzy, "carbolic acid."

"Vat's dat?" asked Ikey.

"Dat's goodbye in any language."

—*Exchange.*

AVOIDING CONFUSION

Best Man—"Wasn't it annoying the way that baby cried all during the ceremony?"

Maid of Honor—"It was dreadful. When I am married I shall have engraved on the invitations "no babies expected."—*Exchange.*

AS IT SEEMED

Dentist—I didn't know you had had this tooth filled before. I see there's some gold on my drill.

Patient—I haven't. I think you must have struck my back collarstud.—*Punch.*

IN AND OUT

Visitor in county jail—"What terrible crime has this man committed?"

Warden—"He didn't commit any crime at all, he was going down the street a few days ago and saw one man shoot another, and he is being held as a material witness."

Visitor—"And where is the man who committed the murder?"

Warden—"Oh, he's out on bail."

—*Light Therapy.*

SCHOOLBOY ANSWERS

Here are some of the definitions given by the pupils at a grammar school:

Stability is taking care of a stable.

A mosquito is the child of black and white parents.

Monastery is the place for monsters.

Tocsin is something to do with getting drunk.

Expostulation is to have the small pox.

Cannibal is two brothers who killed each other in the Bible.

Anatomy is the human body, which consists of three parts, the head, the chist and the stummick.—*Med. Pocket Quarterly.*

Thumbnail Therapeutics

PREPARING FOR OPERATION

When an operation is to be performed, it is incumbent upon the surgeon to look carefully into the general condition of the patient and to see that he is properly prepared. It is folly, except in the most urgent cases, to rush a patient to the hospital and operate upon him at once. In such urgent cases it is good practice, if it can be done, to give the patient a transfusion of whole blood before operating.—Dr. Joseph Beck, of Chicago.

SOAPS AS GERMICIDES

The thorough washing of the hands, with the formation of a good lather, will destroy any adhering diphtheria bacilli, streptococci, pneumococci, gonococci or meningococci. Any ordinary soap will serve for this purpose. Other microorganisms are less or not at all susceptible to the germicidal action of soap. —Dr. Walker, of Hot Springs, Ark.

WAX IN THE EAR

If the ear is filled with a mass of hard wax which will not come out readily by proper syringing with warm water, the wax may be softened by filling the external canal with the following solution, three times a day, and letting it stay in for 15 minutes:

℞

Sodii Bicarb.	gr xv	(1.0)
Glycerin.	ƒ3 i	(30.0)
Aquae Dest.	ƒ3 i	(30.0)

—Dr. Arthur H. Cheatle, of London, Eng.

PROPER SHOES FOR WOMEN

Some women have had their feet ruined by too high heels, but it should be remembered that a low-heeled shoe is capable of doing as much harm as a high-heeled one, if it is unsuited to the foot. Women who have shortened tendons in the calves should wear high heels. If they wear low ones it will result in pains in the ankles and calves as well as in the feet. Low shoes, with low heels, tend to cause enlargement of the ankles.—Dr. I. N. Finkel, of New York.

ANORECTAL FISTULA

Every perirectal abscess becomes a fistula as soon as it is opened. The only logical method of treatment in these cases is to locate the point of entrance of the infection from the bowel, excise all infected tissues and divide all structures up to and through the infected crypt. The best dressing is a moist, boric acid compress and no packing of the wound.—Dr. C. F. Martin, in *A. J. of Surg.*

VOMITING OF PREGNANCY

In cases of toxemia in pregnancy, characterized by gastric disturbances, sexual activities must be entirely discontinued as the pelvic congestion attending such activities increases gastric irritability. — Dr. Karl Thorsgaard, Chicago.

ATROPINE AND PEPTONE INJECTIONS

By preceding injections of peptone with a hypodermic injection of atropine, anaphylactic shock may be prevented, according to experiments made by Garrelson and Santenoise.—*Pharmacal Advance.*

CESAREAN SECTION IN ECLAMPSIA

Cesarean section is *not* a treatment for eclampsia, and should be done only when there are definite *obstetric* indications for its performance.—Dr. F. D. Hollenbeck, Chicago.

PROSTATIC CONGESTION

The combination of aletroid, bryonin, caulophylloid, macrotoid, helonoid and hyoscyamine sulphate, which many physicians have been using for years for the relief of congestions of the pelvic viscera in women, is equally effective in ameliorating or controlling prostatic congestion.—Dr. J. E. Lemire, Worcester, Mass.

IMPASSABLE STRICTURE

In impassable stricture, insert snugly against it an instrument heated to the highest point at which it can be borne by the patient. The stricture may then become easily passable.—*Urol. & Cutan. Rev.*

DIATHERMY OVERDOSAGE

In treating cases of nephritis by diathermy, overdosage is shown by restlessness, profuse perspiration and precordial anxiety. Prolonged sittings may lead to an undesirable accumulation of heat. It is best

to give initial treatments for only 15 minutes, extending the time of application after the patient's individual tolerance has been established.—Drs. Kolischer and Jones, in *J. A. M. A.*

THE FIRST STAGE OF LABOR

The general plan of treatment in the first stage of labor consists in lessening the strain by morphine and scopolamine (hyoscine), seeing that the bladder is kept empty and that the patient takes nourishment.—Dr. J. P. Greenhill, in *M. J. & Rec.*

ABORTING COLDS

Colds due to chilling can usually be aborted by putting the patient immediately to bed and making him perspire freely by hot water bags, hot blankets and the drinking of hot liquids.—Dr. A. W. Morse, in *Am. Otol. Rhinol. & Laryngol.*

ARTERIOSCLEROTIC HEMORRHAGE

Arteriosclerotic hemorrhages, particularly from the nose, may be stopped by means of electrocoagulation when other methods have failed. A current of 350 to 400 milliamperes is used.—Dr. Hirsch, in *Klin. Wchnschr.*

GALL-BLADDER DISEASE

The treatment of chronic gall-bladder disease is essentially medical.

Removal of *all* foci of infection is the most important point in the treatment.

Frequent feedings (every 2½ or 3 hours), fairly rich in fat, produce efficient "biliary drainage" without the use of the Lyon method. If the patient vomits the feeding, another should be given, at once. Olive oil, one tablespoonful three times daily, should be given with meals.

Surgical treatment should be confined to complicated cases, which comprise only about ten percent of the total.

Thorough and prolonged postoperative treatment is essential to obtain good results from operation.—Dr. Albert F. R. Andresen, in *Long Island M. J.*

UNHEALTHY GRANULATIONS

A 10-percent solution of zinc chloride is useful as an application to unhealthy granulating surfaces.— *Urol. & Cutan. Rev.*

OPERATING ON CARBUNCLES

Make the usual crucial incision over the carbuncle. *Dissect back the four skin flaps* as far as the sound tissue, cutting away all necrotic skin. Cut away the whole suppurating area with a knife. Pack the cavity with gauze wrung out of a suitable antiseptic solution (metaphen, 1:5000, or chlorazene, 1:1000 to 1:200 are suggested.—Ed.). When the wound is clean and granulating, the skin flaps can be turned back to partly cover it. These flaps rarely slough.—Arthur Edmunds, F. R. C. S., in *Lancet.*

EPINEPHRIN IN PARAPHIMOSIS

In cases of paraphimosis, wrap the end of the penis, including the strangulated band, with an absorbent cotton compress soaked in equal parts of epinephrin solution, 1:1000, and 10-percent cocaine solution. Bandage with moderate compression and leave on for 15 minutes. At the end of this time, the edema will have subsided and the prepuce can be replaced in the normal position.— Dr. Yogindra Deva, in the *Lancet.*

CHRONIC URETHRITIS

Success in treating chronic urethritis comes only after carefully ascertaining the exact site and character of the causative lesion.—*Urol. & Cutan. Rev.*

MILK INJECTIONS FOR CARBUNCLES

Intramuscular injections of boiled milk constitute the method of choice in treating carbuncles and furunculosis.—Dr. Wirauk, in *Ohio S. M. J.*

MORPHINE IN DYSPNEA

In dyspnea of cardiac origin no drug is equal to morphine; but in cases of pulmonary origin, associated with much cyanosis, it is usually contraindicated.—Dr. Hutchinson, in *Brit. M. J.*

HYOSCINE IN UREMIC INSOMNIA

In cases of insomnia, restlessness and delirium due to uremia, very good results frequently follow the hypodermic injection of hyoscine, gr. 1/100.—Dr. Hutchinson, in *Brit. M. J.*

Current Medical Literature

PSYCHIC DISORDERS OF MENSTRUATION

In the *International J. of M. & S.* for March, 1926, Dr. Paul Bonifield, of London, declares that dysmenorrhea, amenorrhea and menorrhagia are frequently of purely psychic origin and as such may, for the most part, be classed among the hysterias. Dysmenorrhea of psychic origin is by far the most common.

The doctor feels that the teaching, for generations, that a menstruating woman is "unwell" has much to do with this condition, and that if women did not *expect* to have pain and discomfort at the menstrual periods these would, in most cases, be absent. Menstruation is a purely physiologic process and there is no reason why it should cause more disturbance than do other physiologic processes, unless there are demonstrable abnormalities in the pelvic organs.

There is no reason why a normal woman should make any change in her daily activities because she is menstruating. Putting a girl to bed at these times and teaching her to feel that she is ill is the best way in the world to make her so. Dr. W. H. B. Stoddart states that dysmenorrhea is an anxiety hysteria. It is, however, easier to convince the girls themselves of this than it is to convince their mothers, most of whom hold to the old, traditional view in the matter. Those who have been convinced and have acted upon the suggestion are wholly pleased with the results.

Unmarried girls frequently suffer from amenorrhea caused by the *fear* that their sexual activities have resulted in pregnancy when such is not the case. An examination and the assurance that she is not pregnant will relieve the patient's nervous tension and the menses will reappear.

Dysmenorrhea is almost unknown among primitive peoples; and it is well known that when some other powerful psychic motive takes the center of the stage, as it did with the Russian women who took arms and went to the front in the War, menstrual disorders have practically disappeared.

The phychic factors causing dysmenorrhea and amenorrhea usually lie near the surface and can be corrected by a thorough examination, to eliminate the possibility of organic disease or pregnancy, followed by a few talks to thoroughly explain conditions and give the patient a new point of view —provided, of course, that the mother or some other woman does not undo all the doctor's work.

Unless there is some physical basis for these two conditions their presence causes no damage to the patient; and if there is a physical cause it is that and not the menstrual irregularities which is productive of harm.

With menorrhagia the case is different. Here the condition itself may result in severe anemia if not checked. The psychic factors, too, lie much deeper and can usually be reached only by fairly exhaustive psychoanalysis. This disorder has only recently been included among conditions having a possible psychic cause.

The menstrual function is more easily influenced by psychic causes than is any other and is therefore most amenable to psychotherapy.

SYPHILITIC TEMPOROMAXILLARY ARTHRITIS

Baltscheffsky, in *Finska Läkaresällskapets Handlingar*, states that his patient had acquired syphilis seventeen years before the pains and swelling developed in the lower jaw, in five months gradually involving the temporal region, with severe pains in cheek and temples and trismus. A complete cure of the arthritis was realized in less than three weeks under iodide and neoarsphenamine.—*Urol. & Cutan. Rev.*

ACETARSONE IN AMEBIC DYSENTERY

Careful examinations at the Mayo Clinic have convinced Dr. Philip W. Brown that amebic dysentery is much more common and widespread in the United States than was formerly supposed. Out of 533 cases seen, 436 were from the United States, every state except thirteen being represented. There were 108 cases from Minnesota, forty-eight from Iowa, thirty-three from Illinois and twenty-six from Wisconsin. The location of the Clinic accounts for this concentration. These figures suggest, however, that careful search would reveal the presence of the endameba quite frequently.

In the *Illinois M. J.* for May, 1926, Dr. Brown describes the treatment of these cases with stovarsol (acetarsone), which he considers the most useful drug now known for the relief of amebic dysentery.

He gives 0.25 Gram (3¾ grains) of acetarsone, three times a day, with meals, to be chewed with the food. This he continues for six (6) days. After a rest of ten to fourteen days he then gives the same dose twice a day for nine (9) days. This allows for the complete elimination of the arsenic between courses and helps to avoid complications.

This treatment was given to sixty-four patients, sixty-one of whom (96.8 percent) had from two to many negative stool examinations after *one* course of the drug. This is to be compared with results in eighty-five cases who received large doses of emetine hydrochloride, with only 41 percent showing repeated negative stools.

Recurrences occurred in only six of these cases, five of whom showed definite ulcerative proctocolitis. Not all ulcerative cases showed recurrences, however, but only 23.7 percent of such cases. After recurrence further treatment with acetarsone was useless, better results being obtained by using some other drug.

Only two complications have appeared, and these in but few cases: gastrointestinal irritation and exfoliative dermatitis. The latter can be largely avoided by withholding acetarsone from patients with acute upper respiratory conditions. Complications cleared up promptly upon withdrawal of the drug.

The ease, simplicity and cheapness of this form of treatment recommend it highly.

Reliance should be placed upon no one drug, but treatment should be varied to meet conditions.

MEDICATION IN ALCOHOLISM

The alcoholic usually does not seek medical assistance until he has pretty well demonstrated that his case has gone beyond his own powers of self-control. Moral lectures and psychotherapy are useless under such conditions.

In *Am. Med.* for October, 1925, Bousfield makes some positive and definite suggestions regarding the use of drugs in treating alcoholism.

If the condition is very bad, and the patient comes in with a stomach loaded with alcohol, 1/10 grain of apomorphine hydrochloride should be given hypodermically if the heart be in fair condition. This has a twofold object: it will probably induce vomiting, but, more important, it will probably give the patient a good long sleep, for apomorphine is a hypnotic of the greatest value in alcoholism. Further doses of 1/30 grain to 1/20 grain may be given at intervals of six to eight hours, and one of these doses should be given immediately before the patient retires to rest for the night. On the second day a small dose of apomorphine may be given in the morning, and another at bedtime. These small doses will not induce vomiting except in rare instances. If a small dose does produce vomiting, it must be discontinued, and some other hypnotic substituted. Hyoscyamine sulphate, followed by a full dose of potassium bromide, is an excellent combination under these circumstances. As soon as the patient commences treatment, he should be given a mixture such as will combine a general tonic with a stomachic, and will simultaneously reduce his physical craving for alcohol. The best mixture to employ is probably the following, given at intervals of two and a half hours to three hours six times daily:

℞ Atropinæ sulphatis, gr. 1/150;
Strychnine sulphatis, gr. 1/30;
Tinct. cinchonæ co., f℥ss;
Glycerini, f℥ss;
Infus. gentian. co., q. s. ad, f℥ss.

After four days this atropine mixture should be discontinued, and a mixture somewhat similar to the following substituted and one drachm given two-hourly in a wineglass of water:

℞ Fld. ext. cascaræ, m. x;
Tr. cinchonæ co., f℥ss;
Aloin., gr. 1/16;
Infus. gentian. co., q. s. ad, f℥j.

This may be varied after a week to the following:

℞ Fld. ext. cascaræ, m. iij;
Aloin., gr. 1/16;
Tr. cinchonæ co., f℥ss;
Inf. quassiæ, f℥j;
Inf. gentian. co. ad, f℥j.

SYMPATHETIC AND PARASYMPATHETIC

Many physicians seem to be not quite clear regarding the functions and relations of the sympathetic and the parasympathetic nervous systems, and Brown and Hunter bring this out very nicely in an article dealing with *calcium deficiency in asthma and hay fever*, in *Annals of Clin. Med.* for October, 1925.

The vegetative or autonomic nervous system consists of two parts, the sympathetic and the parasympathetic, which act antagonistically to each other and are normally in a state of balance.

In asthma there is a vagotonia, that is, a condition of hyperirritability of the vagus, or at least of the bronchial branches of this nerve. Now the vagus nerve is the chief component of the parasympathetic system. An attack of asthma can be relieved, therefore, by depressing the parasympathetic or by stimulating the sympathetic. For example, atropine in relieving an attack of asthma acts by paralyzing the termination of the vagus; whereas adrenalin relieves an asthmatic attack by stimulating the sympathetic.

It seems that sodium and potassium ions in the blood and tissues stimulate the parasympathetic nervous system, whereas calcium ions act antagonistically to sodium and potassium and stimulate the sympathetic system. Consequently any deficiency of calcium in the blood and tissues would permit an overactivity of the parasympathetic and thus predispose to asthma. Likewise, in hyperesthetic rhinitis (perennial hay-fever) there is a condition of hyperirritability of the parasympathetic supplying the nose, which condition would be favored by a deficiency of calcium.

KIELLAND'S OBSTETRIC FORCEPS

There has been a good deal of discussion of late relative to the merits of the Kielland obstetric forceps. Those who have become most familiar with its use seem to be most enthusiastic about it.

In the *Therap. Gaz.* for March, 1926, Dr. L. Averett, of Philadelphia, sums up the points regarding this instrument very well. The forceps is described as follows:

1.—The blades are bayonet form, so that the handles and the blades are in the same axis and take the place of axis traction forceps.

2.—It has a small pelvic curve which makes biparietal application possible in occipitoposterior positions; rotating the occiput anteriorly and extracting the head without reapplication of the forceps.

3.—The shank between the handle and the blade is very narrow, so that the blades can be turned in the uterus without injury.

4.—It has a free-shifting lock.

5.—It has a button on the anterior surface of handle showing in which direction forceps is to be turned.

The advantages of the forceps are:

First: The forceps can be applied biparietally in any position of the head, grasping the part which can stand pressure best, namely, the cheeks and underlying bones, and not the orbit, nose, neck or occiput. It grasps the head firmly, fits closely, and can safely be used as an instrument for rotation, without injury to the child's head or soft parts of the pelvis.

Second: The symmetrical position and close fitting of the forceps on the head prevent them from slipping or changing the position of the head during traction or rotation. It does not increase the dimensions of the head and does not hinder its normal mechanism, and therefore requires less force for extraction.

Third: As stated before, they can be applied biparietally in the occipitiposterior position or when the occiput is in the hollow of the sacrum, and occiput rotated anteriorly and head extracted without reapplication of forceps. This can also be done in face presentation, with the chin in the hollow of the sacrum.

Fourth: Its free-shifting lock makes it possible for a biparietal presentation, where one blade is applied deeper than the other, and the forceps will lock. With any other forceps such application is impossible.

Fifth: Its use diminishes fetal mortality and maternal morbidity.

RELEASING GAS FROM THE STOMACH AND INTESTINES

The presence of gas in quantity in the digestive tract is productive of much immediate discomfort and of serious after effects, if the distention is prolonged. Carminatives are uncertain. The mechanical method for removing gas from the stomach and bowel given by Mosher in the *Long Island M. J.* for October, 1925, should prove helpful in many cases. It is carried out as follows:

Insert a hard-rubber rectal tip (like that used on a fountain syringe) into the anus to permit the exit of gas as fast as it reaches the rectum.

Lying in the recumbent posture, follow three inspirations by long, yawn-like expirations, to raise the contents of the abdomen into their normal plane.

Lay a pint bottle filled with hot water on its side, crosswise upon the course of the descending colon, and with the hand roll it gently up and down, making pressure during the downward motion. A few such movements will empty that section of the canal of its contained gas.

Move the bottle to the site of the transverse colon and rock it from right to left, and again down the descending colon. Continue this movement till the contained gas has passed on.

Place the bottle over the ascending colon, as far down only as the top of the hip (to avoid pressure on the appendix). Press gently upward and across the transverse colon as before.

Follow these movements by placing the bottle over the middle of the abdomen and press lightly to move the contained gas toward its ileocecal exit.

Last and of most importance, release the gas from the stomach by placing the bottle upon it and making light pressure from its left lateral border toward the pylorus. Follow with pressure from above downward and to the left and from below upward. Removal of gas from the stomach is facilitated by a repetition of long, slow expirations.

TOXINS OF ERYSIPELAS AND B. PRODIGIOSUS IN INOPERABLE MALIGNANT TUMORS

Anyone who has a sound and well-authenticated contribution to make toward the solution of the cancer problem deserves a careful hearing, and Dr. William B. Coley, of New York, seems to have made such a contribution in the *Therap. Gaz.* for March, 1926, in advocating the intramuscular injection of the mixed toxins of the streptococcus of erysipelas and of *B. prodigiosus*.

Various observers had noted, prior to 1893, that patients with extensive sarcomas and carcinomas who had an attack of erysipelas were frequently much improved and sometimes appeared to recover entirely.

This method of treatment is not recommended in operable cases, except as a prophylactic against recurrence after the necessary operation has been performed, and when used it should be combined with treatment by means of radium or x-rays or both in suitable cases.

The toxin treatment has been used alone only in cases which were considered inoperable and entirely hopeless by able and reliable observers, and in this very unpromising group there have been about 10 percent of apparent cures which have persisted for a number of years. It seems to be especially efficacious in the treatment of various types of *sarcoma*.

The initial dose of the toxins should be very small (½ minim or less) and should be gradually and carefully increased until a reaction is obtained. In cases of inoperable tumors the treatment should be continued until all traces of the tumor have disappeared and for several months after. A number of cases have received injections from one to three times a week for periods of a year or more without apparent bad results.

The author feels that the dangers of this treatment have been overestimated and that if used with care and intelligence the risk

is very slight. In 1000 cases there have been but three deaths attributable to the toxins.

HEADACHE FOLLOWING LUMBAR PUNCTURE

The severe headache which frequently follows the operation of spinal puncture is one of its greatest drawbacks, and Dr. H. M. Greene, of Portland, Ore., reports, in the *J. A. M. A.* for February 6, 1926, some suggestions for obviating this distressing symptom.

Dr. Greene feels sure that lumbar puncture will not be followed by headache unless the dural sac is injured to such a degree that the leakage of cerebrospinal fluid will remove the brain's water cushion. A small needle produces less trauma than a large one; and the patient must be kept absolutely quiet while the needle is in the spinal canal if this leakage is to be avoided. A small needle has the added advantage that it will bend before it will break.

The details and methods employed in this operation are as follows:

1.—The patient should be placed on a table in a comfortable position and should remain motionless while the needle is in the dural sac.

2.—A local anesthetic should be used in both the skin and the deeper tissues.

3.—A needle with a point that is round, tapering and sharp should be used. The needle should be sharpened so as to resemble an ordinary cambric needle and should be polished each time before it is used. Gage 22 is the most suitable, but a needle one or two sizes larger may be used with good results.

4.—After the fluid appears in the hub of the needle it is advisable to aspirate the sample, using all precautions of very slow withdrawal of fluid and its reinjection if alarming symptoms appear.

Headache has occurred but twice in 215 punctures by this method, and patients have not been put to bed for more than an hour or two.

SODIUM IODIDE, INTRAVENOUSLY, IN INFECTIONS AND ALLERGIES

Dr. James W. Wiltsie, of Binghamton, N. Y., seems to have been doing some original biological thinking and has worked out some ideas in connection with the intravenous use of sodium iodide which he reports in the *M. J. and Rec.* for February 17 and March 3, 1926.

He states his belief that any foreign substance, introduced intravenously, acts either directly or indirectly as an antigen or antigen producer; that complement fixation occurs; and that the resulting leucocytosis develops to destroy the end products of this fixation.

Sodium iodide has only two primary actions: First, it stimulates all living protoplasm; second, it promotes lysis and disintegration of all dead and dying protoplasm and all pathologic exudates. It is this second action which causes it to be so useful in syphilis (a general infection, with no tendency to localization) and so dangerous in tuberculosis (a local infection, healed by encapsulation and made worse by dissolving the surrounding exudate).

In chronic infections, such, for instance, as chronic cholecystitis, abscessed teeth and the like, the intravenous injection of a solution of 31 grains of sodium iodide, every other day, for one or more doses (up to six) gives rise to more or less severe focal reactions at the site of the disorder, thus frequently facilitating diagnosis. It is well known that the administration of sodium iodide will frequently be followed by a positive Wassermann test, in cases where the test had before been negative, in the presence of clinical signs of syphilis.

Dr. Wiltsie has obtained similar results in a number of cases of allergy, where he uses it only during an acute attack, and believes that the benefit is greatest in the severest cases, because overstimulation is added to an already over-worked cell function, thereby causing its prompt exhaustion, with relief of the symptoms. In infections and allergies, marked clinical improvement has followed the initial reactions in practically all cases.

A number of interesting and instructive case reports accompany this article.

BUTESIN PICRATE IN EYE, EAR, NOSE AND THROAT SURGERY

In his search for an ideal anesthetic for use in the surgery of the head cavities, Dr. J. G. Parsons, of Lewiston, Montana, has found that butesin picrate approaches the necessary requirements, and reports his experiences in *Northwest Med.* for June, 1926.

This preparation, which is the picric acid salt of the local anesthetic, butesin, and contains about 37 percent butesin and 63 percent picric acid, is a promptly-acting and reasonably powerful local anesthetic. In therapeutic dilutions, it is nonirritating and its toxicity is very low. It is soluble in water to about 1:2000, and in vegetable oils, 1:50 to 1:100. Aqueous solutions deteriorate and should be used while fresh (within one week).

Dr. Parsons uses a 1:2000 solution of butesin picrate when removing foreign bodies from the eye and in treating corneal ulcers. Anesthesia is almost instantaneous and is sufficiently deep and lasting for carrying out all minor procedures. The 1-percent ointment makes an excellent postoperative dressing and is useful in treating burns and ulcers of the cornea.

In the nose, aqueous solutions are sedative and antiseptic in hyperesthetic rhinitis and after operations. For more prolonged effect he uses a 1-percent solution in almond or cottonseed oil. Gauze impregnated with a 1-percent ointment is used for packing after septum operations.

The doctor has used the butesin picrate solution for local anesthesia in tonsillectomies and finds it as effective as 1-percent

novocaine solutions, with the added value of its antiseptic properties.

A mixture of 5 percent butesin picrate with 95 percent acetylsalicylic acid makes a useful powder to use in the tonsillar fossae after tonsillectomy, materially reducing postoperative discomfort.

Solutions are best prepared by heating the powder in a flask with distilled water. One grain makes four ounces of solution, and in such dilutions the drug becomes very inexpensive.

CONGENITAL SYPHILIS

In the *J. A. M. A.* for July 31, 1926, Dr. Philip H. Sylvester, of Boston, reviews the records of congenital syphilis in his city during the past twenty-five years.

Statistics indicate that from 5 to 10 percent of pregnant women are syphilitic, and that 1 percent of white and 10 to 15 percent of negro babies suffer from congenital syphilis. This disease is also shown to be the cause of 15 to 25 percent of all fetal deaths. The mortality of congenital syphilis, from the time of conception to the end of the first year, is about 50 percent.

In pre-Wassermann days (1901-1914), the death rate was 85 percent. With the introduction of the Wassermann test and the use of the organic arsenicals in treatment (1915-1919) it declined to 33 percent. The operation of organized clinical and social service has, in Boston, now (1920-1925) brought the rate down to 21.5 percent.

Experience has established the fact that if the treatment of these children is to be effective it must be begun at an age between five weeks and two months. As the Wassermann test is unreliable thus early in life, the diagnosis must largely be based on a complete history and a careful physical examination.

The greatest hope for cases of this sort lies in prevention. A very little treatment will enable a syphilitic mother to carry her fetus to term; and such women, if treated *adequately* during pregnancy, will usually give birth to nonsyphilitic children. Of fourteen syphilitic mothers handled at the Infants' Hospital, thirteen gave birth to nonsyphilitic babies.

Dr. Sylvester concludes, on the basis of these studies, as follows:

1.—The fetal and infantile mortality and morbidity from congenital syphilis should make it a subject of importance in our work.

2.—The Wassermann reaction, the development of arsenical therapy, the specially organized clinic and the social service have combined to effect a satisfactory reduction in mortality and morbidity, provided treatment is instituted during the critical period of from five weeks to two months.

3.—The foregoing factors have had very little effect on cases appearing for treatment much before or much after this period.

4.—More effective treatment for the very early case must be developed, or its prevention must be obtained through treatment of pregnant mothers.

5.—Sulpharsphenamine, intramuscularly, appears to be nearly as effective as neoarsphenamine, intravenously, in causing disappearance of lesions and serologic reversals in early cases. It appears to be as effective in causing the lesions to disappear in late cases and more effective in reversing the serum.

6.—It is possible that a definite reduction in the incidence of congenital syphilis may be brought about through educational and legal measures.

ALPHA-LOBELINE

The pure alkaloid, alpha-lobeline, differs from lobeline sulphate, which is a mixture of various alkaloids and resins. Alpha-lobeline was first isolated by Henry Wieland in 1918 and is, with the exception of carbon dioxide, the only driect and specific respiratory stimulant known. In therapeutic doses it has no secondary effects. It is the physiologic antidote to such respiratory poisons as morphine, chloral, etc.

Wieland demonstrated that alpha-lobeline does not cause vomiting nor depress the vagus or the heart. The blood pressure is sometimes slightly depressed, temporarily. The drug is promptly destroyed in the body, so that there is no cumulative action; death does not result from 100 times the therapeutic dose.

In the *Am. J. of Surg.* for October, 1925, Dr. Kurt Peters, of New York, summarizes the clinical experience of various European workers. Doederlein resuscitated thirty-two out of forty cases of asphyxia neonatorum, the remaining eight having other pathologic conditions. Grill had like results and resuscitated several other cases in which all other recognized methods had failed.

Alpha-lobeline is indicated in all cases of central respiratory depression, whatever the cause. It may be injected subcutaneously (best in most cases), intramuscularly or intravenously (for very prompt and powerful effects). The subcutaneous dose, which usually acts in one to two minutes, is 10 mgm. (1/6 grain) for adults and 3 mgm. for children; intravenous dose 3 mgm. for adults. The dose may be repeated as indicated.

The literature on this drug is growing and it is well worthy of a trial in suitable cases. No work has yet been done to determine its value when given by mouth.

OLD REMEDIES FOR SYPHILIS, USED IN A NEW WAY

In the *Med. Sentinel* for May, 1924, Dr. H. M. Greene, of the University of Oregon Medical School, reported some interesting biological observations of the life-cycle of the *Treponema pallidum*, which observations have led him to formulate some new ideas regarding the technic of the treatment of syphilis.

The article contains much interesting material and is recommended for the perusal

of syphilologists. The practical conclusions follow:

"1.—That there is sufficient evidence submitted to support the theory that the treponema pallidum exists in man in more than one state; that is, that it exists in a resting state as well as in an active living state.

"2.—The treponema pallidum in the active living state is readily killed by arsphenamine; therefore, when laboratory findings and clinical symptoms are all negative, the problem is to reach the organism in the resting state which is highly resistant to treatment, as well as those embedded in areas of fibrosis or in places like the subdural sac, which are not served directly by the circulating blood.

"3.—That as soon as the clinical symptoms and laboratory findings of the blood and spinal fluid indicate that treponemes in the active living state are under control, then the zero hour for the next dose of the arsphenamines or any of the active syphilitic remedies will not come before twenty-one or twenty-eight days, or longer when clinical symptoms and laboratory findings indicate that control is being maintained.

"4.—Theoretically and from experience we are led to believe that arsphenamine administered at shorter than twenty-eight day intervals after the disease is under control, on account of its irritating qualities, produces a round cell infiltration in the vital organs; creates an inflammation in all the tissues, similar to arsenical dermatitis; increases fibrosis; diminishes peripheral and general capillary circulation; and thereby establishes havens for the parasite and tears down the patient's resistance to this disease as well as to all other diseases, because overtreated syphilitic patients often succumb easily to pneumonia and to other acute and chronic infections as well.

"5.—Iodides to toleration are indicated in both early and late syphilis: In the former for the possible effects upon the parasite, in the resting state as hereinbefore mentioned; and in the latter to increase oxidation, reduce fibrosis, and increase peripheral and capillary circulation.

"6.—Frequent laboratory tests of both the blood and spinal fluid are essential during the treatment of syphilis. If the clinical symptoms and laboratory findings do not indicate that the disease is under control, then a search for the possible cause is essential. It may be found in a faulty diet, bad hygiene, bad habits, overwork, focal infections, etc., as well as an improper treatment.

"7.—Kolmer's quantitative complement fixation test (Wassermann) is essential in order to determine the results of the management of the case; and as the weaker dilutions become negative a corresponding improvement will be observed in the patient."

SIMPLE DIETARY SUGGESTION

In a recent number of *McCall's Magazine*, Dr. McCollum says that the general principles of diet can be summed up in four simple rules:

1.—Build up the daily menus around a quart of milk for each member of the family.

2.—Use eggs and meat frequently, but not excessively.

3.—Serve salads twice a day to insure such raw vegetable foods as fruits, tomatoes, celery, lettuce, onions and so forth, appearing regularly in the menu.

4.—Serve one leafy vegetable, such as beet-tops, kale, spinach, and so forth, each day.

If you meet these requirements you can eat whatever else you desire.

BARBITAL-SODIUM IN COCAINE POISONING

Dr. Arthur L. Tatum, of Chicago, has been doing some interesting work on animals in a study of methods to counteract the effects of cocaine poisoning, and reports his results in *Illinois M. J.* for June, 1926.

Observing that the clonic convulsions which characterize this form of poisoning were decreased or absent in decorticated animals he tested the effect of various hypnotic drugs in controlling the symptoms and finally found that, for dogs, the best preparation was 100 mgm. of barbital-sodium, dissolved in 5 cc. of a saturated solution of paraldehyde in water, per kilo of body weight. Monkeys required only 70 percent of this dosage, and man would probably require even less. The solution was given intravenously and controlled the convulsions almost at once.

Dr. Tatum summarizes his results as follows:

1.—Poisoning by subcutaneous injections of cocaine cause death by respiratory failure.

2.—Artificial respiration is an effective treatment only in the rabbit, the lowest type of animal employed in this series. In the higher types—the cat, dog and monkey—artificial respiration was of no avail.

3.—The intravenous injection of appropriate hypnotics such as our mixture of barbital-sodium and paraldehyde causes immediate cessation of convulsions.

4.—Hypnotics must be given in such a quantity as to prevent any and all manifestations of cortical or clonic convulsions.

5.—The longer the convulsions are allowed to continue before the administration of the hypnotics the greater is the danger of failure of the treatment, consequently the treatment should be instituted as soon as possible after clonic convulsions appear.

6.—A prophylactic administration of the hypnotics raises the tolerance to the greatest extent.

7.—Since the efficacy of the treatment parallels the increasing complexity or development of the brain in the series of animals employed, it should follow that man should be still more susceptible to this type of treatment. As to the dosage to be employed we can only guess. Our suggestion is to

employ a dosage equal to or slightly larger than the usual standard hypnotic dose. If this is insufficient to completely check the clonic convulsions a cautious increase in dosage would be indicated.

STAND BY TEACHER

The most harmful thing a parent can do is to ridicule or criticize the teacher in the child's hearing. The instructor must be the child's guide in school hours and if you take away the young one's faith in his leader, he is bewildered. An affectionate parent has the impulse to flare up in his child's defense when there is trouble at school, but impulsive sympathy may do harm even though the child is wholly in the right. A quarrel between parent and teacher is almost as bad for the child concerned as a quarrel between his father and mother. A wise parent waits to see if a slight flurry will not blow over and holds a kindly, interested, impartial view-point. If the difficulty does not adjust itself, a conference should be held with the teacher. Even if the teacher is at all to blame, as she sometimes is, active partisanship of the boy or girl is not wise.—ROBERT E. SIMON in *Children, The Magazine for Parents.*

HEPATIC DEPRESSOR PRINCIPLE GIVEN BY MOUTH

The use of liver extracts for the reduction of high blood pressure has had quite a good deal of attention recently. In the work of MacDonald, Major and others these substances were always injected parenterally.

In the *M. J. and Rec.* for July 21, 1926, Dr. Henry R. Harrower, of Glendale, Calif., reports satisfactory results with a liver extract given by mouth.

In as much as the liver possesses strong detoxicating abilities, it is quite logical to believe that its stimulation would increase the patient's detoxicating powers. This propensity is anabolic, for it is through the building up of certain urea forerunners ("ureagenesis") that the liver is able to make toxic substances harmless.

The hepatic principle which is used in lowering blood-pressure undoubtedly produces that effect by stimulating this very detoxicating power. In other words, it does not act in a pharmacodynamic manner. The clinical evidences supporting this view show that it has practically no effect in organic hypertensions. Also, its use in normal individuals produces no particular change in the blood-pressure readings.

From the evidence available to date, the following conclusions are drawn:

"1.—The liver is a gland of internal secretion whose endocrine function is concerned with detoxication, *i.e.*, the destruction of certain metabolites of protein origin.

"2.—Where high blood-pressure accompanies defective hepatic detoxication, the work of the liver can be increased, and the pressure reduced by the administration of a residue separated from the liver by fractional solvent methods.

"3.—This anabolic, endocrine principle is not desroyed by digestion, but is quite promptly active when given by mouth. The dosage of this substance should depend upon the status of the patient and should vary in proportion to the response to it.

"4.—The principal interference to the success of this new measure in the treatment of high blood-pressure is sclerosis, and sclerosis of the kidneys has a more marked detrimental effect than arteriosclerosis.

"5.—Finally, the effect of this substance when given by mouth has not at any time been accompanied by any cumulative or detrimental influences; but, on the other hand, irrespective of the degree of depressor effect brought about, in many instances a subjective benefit has been noticed."

EPHEDRINE IN HAY-FEVER

A preliminary report on the results obtained by the use of ephedrine in the treatment of hay-fever, by Drs. Fred W. Gaarde and Charles K. Maytum, of the Mayo Clinic, appears in the *Am. J. Med. Sc.* for October, 1926.

Because they were unfamiliar with the drug, the doses given were small and tentative, but in spite of that the results, while not exceedingly brilliant, were highly interesting and satisfactory.

In all, 26 patients were treated with doses not exceeding 60 mgm. (about 1 grain) not more than 2 or 3 times a day. Three cases should really be excluded from this list, as they took but one dose of the drug. Of the remaining 23 cases, 13 were practically completely relieved of all hay-fever symptoms for from three to seven hours after each dose. Two more received equal relief from 60 mgm. doses but objected to the subjective symptoms produced and preferred the lesser degree of comfort produced by doses of 30 mgm. These two are included, with three others among the 5 cases obtaining fairly good results. In 5 cases (excluding the 3 who took but one dose), little or no benefit was obtained. These were all very severe cases, frequently complicated with bronchitis.

Most of the patients experienced a feeling of "nervousness", increase in the pulse rate and slight tremor soon after the drug was taken. Only those who were highly neurotic were at all distressed by these symptoms. The three who stopped treatment after the first dose did so on this account.

A remedy which will bring a considerable measure of comfort to 78.2 percent of hay-fever sufferers and almost totally relieves 65.2 percent is surely well worthy of a trial in these distressing cases.

New Books

VAUX: EDGAR'S OBSTETRICS

EDGAR'S PRACTICE OF OBSTETRIC. For Students and Practitioners of Medicine. *By J. Clifton Edgar. Revised by Norris W. Vaux. Sixth Edition. Illustrated. Philadelphia: P. Blakiston's Son & Co.* 1926. *Price* $8.00.

This old, standard textbook of obstetrics has now been revised and brought up to date. As Dr. Edgar has relinquished his teaching position the work has been done by Dr. Vaux, and seems to have been well done.

The aim of the new editor has been to make the book concise and practical and, with that end in view, he has eliminated a large amount of unnecessary and obsolete material, replacing it, where necessary, with modern ideas. As a result this edition is considerably smaller in size than former ones.

Prenatal care and hygiene and the after-treatment of the puerperal woman, as well as the use of anesthetics in labor and other things now considered important have been given careful attention. The entire book seems to be as near up to date as any textbook can be.

All the pleasing features of arrangement and presentation of material which characterized the older editions have been carefully retained, so that it makes a thoroughly satisfactory reference work.

The first chapter deals with the physiology of the female reproductive organs, after which we find first the physiology and then the pathology of the various stages of pregnancy, labor, the puerperium, and the newly-born discussed in detail. The last part deals with obstetric surgery. This arrangement is excellent, for we can adequately appreciate pathologic conditions only after we have a thorough understanding of the normal physiology.

The descriptions of the mechanisms of normal and pathologic labor are especially complete, detailed, and well illustrated.

The binding is durable and attractive; the paper of a fine quality, which makes the cuts and type show up well; the illustrations copious and well chosen, including a number of very good color plates; the use of bold-face subject heads adequate; and the index satisfactory.

For anyone, especially the student and practitioner, who needs an all-around, modern textbook on obstetrics, it would be hard to find one which would serve the purpose better or give more entire satisfaction.

MEDICAL CLINICS OF NORTH AMERICA

THE MEDICAL CLINICS OF NORTH AMERICA. (*Issued serially, one number every other month.*) *Volume X, Number* 1. *Philadelphia Number, July* 1926. *Philadelphia and London: W. B. Saunders Company. Price per clinic year, July,* 1926 *to May,* 1927, *Paper* $12.00; *Cloth* $16.00 *net.*

The July, 1926, number contains contributions from the clinics of Philadelphia, including the work of Pepper, Norris, McCrae, Gilpin, Funk and a number of others.

Articles on the Neglect of Old Symptoms, by Dr. O. H. P. Pepper; Causes of Failures in Hay-fever Treatment, by D. Richard A. Kern; The Significance of Precordial Pain, by Dr. Henry K. Mohler; and several other pertinent subjects will be of especial interest to practitioners.

These volumes are always of the highest interest and value, especially to those who are unable to attend clinics in the larger medical centers.

PLANK: PHYSICAL THERAPY

ACTINOTHERAPY AND ALLIED PHYSICAL THERAPY. *By T. Howard Plank, M.D. Chicago: Printed by Manz Corporation.* 1926. *Price* $7.50.

This is essentially a book for general practitioners who want to add one or more lines of physical therapy to their armamentarium and are more interested in practical clinical results than they are in the fundamental biophysical problems involved.

The first 120 pages are devoted to the mechanics and physics of and the general effects produced by actinotherapy, diathermy, catalysis, and radium.

The body of the work consists of a list of diseases, alphabetically arranged, with their etiology, pathology, symptoms, differential diagnosis, and prognosis briefly given and an outline of the treatment, physical and otherwise, suggested. Many case reports are included.

The bookmaking is reasonably satisfactory, but nothing remarkable.

The beginner in physical therapy will probably find enough in this volume to give him a satisfactory start in the work, but the advanced student of these methods will find it decidedly elementary.

LORAND: OLD AGE DEFERRED

OLD AGE DEFERRED. The Causes of Old Age and Its Postponement by Hygienic and Therapeutic Measures. *By Arnold Lorand, M.D. Sixth Edition. Translated, with additions, by the Author from the Third German Edition. Philadelphia: F. A. Davis Company.* 1925. *Price* $4.00.

This reissue of this standard work on the subject of the preservation of life and youthfulness has been made by Dr. Lorand as a special offering to the American people, many of whom, he rightly feels, are dying

prematurely from causes which are wholly preventable by following a reasonably hygienic mode of living. He has added a special introductory chapter addressed to us and dealing with some of our special problems, among them the prevention and treatment of premature old looks.

This book is the most complete, detailed, and reasonable presentation of the subject of the prevention or postponement of senility with which we are familiar. It contains 500 pages, embracing fifty-eight chapters, an appendix, glossary, and index.

The importance of air, water, food, sleep, bathing, exercise, proper elimination, and other hygienic matters are considered in full detail, so that no person of ordinary intelligence and education need remain in the dark about the way of life which is salutary and *just how* the suggestions should be carried out.

The use of tea, coffee, alcohol, tobacco, meat, milk, and other articles of wide consumption is fully considered, pro and con. There is no suspicion of fadism or propaganda for any cult or ism in the entire book, but a scientific and logical presentation of facts, most of which are already known to the majority of physicians. Lorand's assembling and presentation of these facts give them, however, a new force and value.

Much attention is given to the part played by the thyroid, sex-glands, and other endocrines in the processes involved in senility, and clear and simple directions for the preservation and reenforcement of the functions of these glands are not wanting.

The bearing of the psychic and spiritual aspects of life upon the development of senility are set forth *in extenso*, and chapters are devoted to arteriosclerosis, high blood pressure, intestinal toxemia, and other subjects of vital moment.

In Chapter 58 are found his "Twelve Commandments for the Preservation of Youth," like this:

"1.—To be as much as possible in the open air, and especially in the sunshine; and to take plenty of exercise, taking special care to breathe deeply and regularly.

"2.—To live on a diet consisting of: meat once a day, eggs, cereals, green vegetables, fruit, and raw milk of healthy cows (as much as the stomach will permit); and to masticate properly.

"3.—To take a bath daily; and in addition, once a week or once every two weeks, to take a sweat bath (if the heart can stand it).

"4.—To have a daily action of the bowels; and in addition to take a purgative once a week if there is any tendency to constipation.

"5.—To wear very porous underwear, preferably cotton; porous clothing, loose collars, light hat (if any), and low shoes.

"6.—To go to bed early, and to rise early.

"7.—To sleep in a very dark and very quiet room, and with a window open; and not to sleep less than six to six and one-half hours, nor more than seven and one-half, and for women eight and one-half hours.

"8.—To have one complete day's rest in each week, without even reading or writing.

"9.—To avoid mental emotions, and also worries about things that have happened and cannot be altered, as well as about things that may happen. Never to say unpleasant things, and to avoid listening to such, if possible.

"10.—To get married; and if a widow or widower, to marry again; and to avoid sexual activity beyond the physiological limit, as also to avoid a total suppression of the functions of these organs.

"11.—To be temperate in the use of alcohol and tobacco, and also in the use of coffee and tea.

"12.—To avoid places that are overheated, especially by steam, and badly ventilated. To replace or reinforce the functions of the organs which may have become changed by age or disease, by means of the extracts from the corresponding organs of healthy animals; but only to do this *under the strict supervision of medical men* who are thoroughly familiar with the functions of the ductless glands."

The book is well made in every respect. The paper is opaque but light, so that the volume is easy to handle. The type is large and clear.

This is a work which we believe should be thoroughly studied by every physician and should be kept at hand for ready and frequent reference. Here he will find the type of information which will render him a valuable and sought-after *health counsellor* to his patients; and if, perchance, he, himself, takes the advice which he should be giving to others it seems highly probable that his days of usefulness to his patients and enjoyment to himself will be considerably increased.

HOWELL: HEREDITY AND REINCARNATION

HEREDITY AND REINCARNATION. *By Olive Stevenson Howell. London, W.C.1, 38 Great Ormond Street: The Theosophical Publishing House, Ltd. (Through the Theosophical Press, 826 Oakdale Ave., Chicago.)* 1926. *Price* $1.00.

The study of heredity is a very fascinating pursuit and has engaged many great minds during the last few hundred years; nor is the riddle yet solved.

Darwin's studies led him to the announcement of the great general plan of evolution. All later studies have steadily confirmed the *plan*, though they have led scientists to reject Darwin's ideas as to how the changes came about.

The author of this little book begins by devoting a few pages to a clear and simple statement of what is meant by reincarnation and to stating some of the logical and scientific reasons why it is not only a sensible but a necessary hypothesis to account for things as they are.

She then discusses in a brief and lucid manner the work of Darwin, Weismann, Mendel, Bateson, Thompson, MacBride and other students and investigators along this line and shows how their studies and ex-

periments have led us to the unescapable conclusion that evolution proceeds by virtue of three factors: Heredity, environment and certain functions of the organism itself.

This third factor is coming to be known as "behaviorism", and includes some inherent power in the organism to initiate changes from within, in response to some stimulation whose nature science has not yet explained, and its behavior during its lifetime—the way it reacts to its environment.

The author then suggests that this third and, hitherto, decidedly mysterious factor is nothing other than the human soul, and that the variations in inherent powers for change and in reactions to environment are due to the different faculties and experiences acquired by various souls during many antecedent lifetimes. She makes it sound very reasonable.

This is one of the clearest and most readable books on heredity and evolution which we have seen, apart from its occult suggestions, and any physician or student of science will be the better for reading it.

No one needs to accept the occult suggestions if they do not appeal to his common sense, but there is, nowadays, enough talk about such matters to make some knowledge of the subject a valuable addition to one's intellectual equipment, and this small volume sets the matter forth so simply and rationally that it does not arouse antagonism.

BLANCHARD: AMBULANT PROCTOLOGY CLINICS

AMBULENT PROCTOLOGY CLINICS. *Edited and arranged by Charles Elton Blanchard, M.D. Fellow and First Secretary-Treasurer, The American Academy of Ambulant Proctology. Youngstown, Ohio: Medical Success Press.* 1925. *Price* $7.50.

One is at a loss, after reading through the several hundred pages of this apparently verbatim report of proctologic clinics held by the editor and an associate of his, to answer the question why the book was printed. Considering the high cost of literary production one would expect for the outlay something like a scientific or at least practical benefit in one's work, but whatever information and misinformation the book contains could have been published in a very small pamphlet. Besides, any ethical work on modern proctology discusses all known methods of socalled ambulant proctology. Perhaps the answer to the question is to be sought in the frankly commercial atmosphere permeating the entire book. Instead of a real preface we have an article on salesmanship; instead of pictures illustrating technics we have full size halftones of clinic groups, with one patient charmingly smiling from under her white sheets at the camera, and of the richly furnished offices of the editor, where the clinics were held.

The book is interspersed with all sorts of quotations. What the relation of woman to civilization, to cite one example, has to do with ambulant proctology, is beyond the reviewer. The reader can easily guess—the book has much padding.

The text is abominable. Jokes and talks on business getting and business success and hints at the commercial failures of learned and ethical physicians abound. They may have been apropos for the few men who witnessed with eagerness such a tremendously delicate and uncommon operation as infiltration anesthesia and the removal of a thrombotic pile, but if a book is to be read by outsiders it should have been edited to bring out the thing the authors went after; and more than two-thirds of the book could have been eliminated with tremendous profit to all. But, as was already alluded to, the book is frankly commercial.

—G. M. B.

EAGLETON: CAVERNOUS SINUS THROMBOPHLEBITIS

CAVERNOUS SINUS THROMBOPHLEBITIS AND ALLIED SEPTIC AND TRAUMATIC LESIONS OF THE BASAL VENOUS SINUSES. A Clinical Study of Blood Stream Infection. *By Wells P. Eagleton, M.D., Medical Director, Newark Eye and Infirmary, Newark, N. J. New York: The Macmillan Company.* 1926. *Price* $4.50.

This is a monograph covering the personal experience of the author, with the type of cases indicated by the title, and is a good example of publications of its class.

It is of interest chiefly or solely to those who specialize in head surgery and should prove interesting and helpful to them.

PATCH: NATURE STUDY

FIRST LESSONS IN NATURE STUDY. *By Edith M. Patch, Department of Entomology, University of Maine, Orono. With 38 Drawings by Robert J. Sim. New York: The Macmillan Company.* 1926. *Price* $1.50.

A pleasing and well-presented elementary book on nature study for young children. The illustrations will catch the childish eye.

Pediatrists might well keep a copy on the table in the waiting room for the use of their little patients. Children under ten years will be charmed with it.

ORR: AMPUTATIONS

MODERN METHODS OF AMPUTATIONS. *By Thomas G. Orr, A.B., M.D., F.A.C.S., Professor of Surgery, University of Kansas. St. Louis: The C. V. Mosby Co.* 1926. *Price* $3.50.

Orr's book is small, containing as it does only 114 pages with 125 illustrations, but it is one of the best monographs we have had the pleasure to read for some time. The author, who possesses expert knowledge on the best and most practical methods of amputations, has eliminated all dubious and obsolete methods and has presented in a readable way only such procedures as promise the best possible results.

Orr has shown in no uncertain way what to do for those who must lose part or all of

their extremities in order to lessen the interference of function after healing. He teaches how to make good and useful stumps and how to fit artificial arms and legs to the stumps so that the earning capacity is not lessened so much as has been the experience in the past. Much that he says can be found in good treatises on surgery, but for detailed information and for excellent illustrations which may be looked upon as a veritable substitute for the living clinic, the reader will find this little book not only valuable as a means of bringing out the best in amputation work, but as a reference manual for many a year to come. We recommend the work highly.

G. M. B.

SANBORN: METABOLISM

ELEMENTS OF METABOLISM. Metabolism Testing, What Is Normal? Conspectus of Metabolism Queries, Tables for Computations. *By Frank B. Sanborn, Formerly Professor in Tufts College. Cambridge, Mass.: Sanborn Company.* 1926. *Price* $1.00.

Basal metabolism tests are being more and more frequently made, but there are still a good many physicians who wonder what it is all about but fear to ask lest they betray their ignorance.

Here is a simple little, paper-bound volume which begins at the beginning and tells the story briefly and simply. It should lift the clouds from the minds of many.

It also contains an elaborate series of tables for metabolism estimations which will eliminate the use of logarithms and slide rules and thus render these tests possible of performance by people who are not expert mathematicians, so that doctors who are new at the game, or even intelligent office technicians, can do the work satisfactorily.

VON GRUBER: HYGIENE OF SEX

HYGIENE OF SEX. *By Max von Gruber. Authorized English Translation. Baltimore: The Williams & Wilkins Company.* 1926. *Price* $1.50.

The practicing physician often has occasion to use a good book on sex hygiene. It is a subject not often written on in this country, and even less often discussed frankly and fairly from the scientific viewpoint, in the language of the ordinary young man or woman who most needs sex information and guidance. This is the feature which appeals to the readers of Dr. von Gruber's short guide to sane sex living. His book has behind it the authority of one of the foremost health workers on the European Continent. The American edition presents a subject of the highest importance to every normal man and woman briefly, simply, and sanely—just the information every physician wishes to put into the hands of his patients. The treatment is from the biologic and physiologic points of view, and the subject is dealt with in a straightforward and unequivocal fashion—yet is free from offense because of the complete honesty of the writer. You will be asked to recommend such a book very often.

PHYSICIANS' APPOINTMENT BOOK

FAWCETT'S APPOINTMENT BOOK. 1927. *Copyrighted* 1926. *Fawcett Publishing Co., Brooklyn, N. Y. Price* $1.50 *Postpaid east of the Mississippi;* $1.75 *Postpaid west of the Mississippi*

This is one of the completest and best arranged physicians' appointment books we have seen, and it is a *business* book, pure and simple, with no first-aid hints, obstetrical tables, dose lists and the like in the back.

There is a page for every day in the year, arranged for appointments every half hour from 8 a.m. to 9 p.m. Spaces are provided after each appointment for entering charges for services and cash received. The pages run to January 6, 1928, so that appointments for the first week of the succeeding year may be entered.

In the back are pages for monthly summaries of income and expenses which, if properly kept up, will make the preparation of income tax returns a very easy matter.

The pages are large enough to be thoroughly serviceable. The book is bound in dark blue art fabrikoid and makes a very pleasing appearance.

HOLMES AND RUGGLES: X-RAY INTERPRETATION

ROENTGEN INTERPRETATION. A Manual for Students and Practitioners. *By George W. Holmes, M.D. and Howard E. Ruggles, M.D. Third Edition, Revised. With* 226 *Illustrations. Philadelphia and New York: Lea & Febiger.* 1926. *Price* $5.00.

Any clever and skillful mechanic can *take* good x-ray pictures, but it takes a man of long training in pathology and roentgenology to *read* them.

This book is a successful attempt to convey the *principles* of roentgen diagnosis, so that the student may supply them to the films being examined.

The book is well made, well printed and well illustrated with a large number of radiographic reproductions which reenforce and clarify the text. It should prove useful to all who have any occasion to examine or interpret x-ray films.

COLLEGE OF PHYSICIANS OF PHILADELPHIA

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. *Third Series, Volume the Forty-Seventh. Edited by Walter G. Elmer, M.D. Philadelphia: Printed for the College.* 1925.

Medical News

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PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS

Sir John Bland Sutton is one of the most illustrious members of the group of physicians and surgeons recently gathered in New York. He holds out great hope for the future and emphasizes the wonderful cooperation among scientists, the work of the bateriologists and the progress that has been made in the matter of serums, vaccines and toxins which must destroy the causes of the disease without poisoning the patient. Sir John is Vice-Chairman of the British Empire Cancer Campaign and President of the Royal College of Surgeons, London.

DOCTORS ENROLLED IN RED CROSS DISASTER RELIEF RESERVE

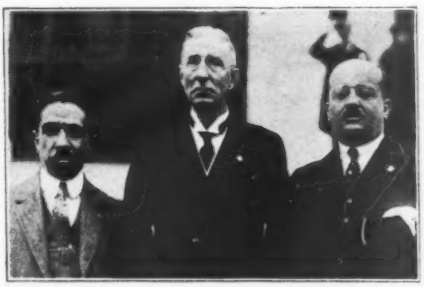
In its efforts to maintain effective disaster relief measures, the American Red Cross recently announced completion of its so-called Disaster Relief Reserve.

This unit consists of reserve doctors, nurses, supply officers, accountants, and family case workers, lists of which are kept at National Headquarters and at two branch offices. This reserve is immediately available for service on call, although its members follow normal occupations until the telegraphic summons to duty. The intention is to save valuable time in the first critical hours of a disaster, when prompt arrival of relief means saving of life, and prevention of needless suffering and hardship. These workers of course, are placed on a salary basis the moment they report for active duty, otherwise their standing in readiness is voluntary.

The American Red Cross is the recognized agency of the United States in national and international relief. It derives its support through membership, which is invited annually through the Roll Call, this year from November 11th to 25th.

SAFETY RULES FOR RADIO

The U. S. Bureau of Standards has issued a handbook giving full safety rules for installing radio receiving sets. This is known as Handbook No. 9, and may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 10 cents.



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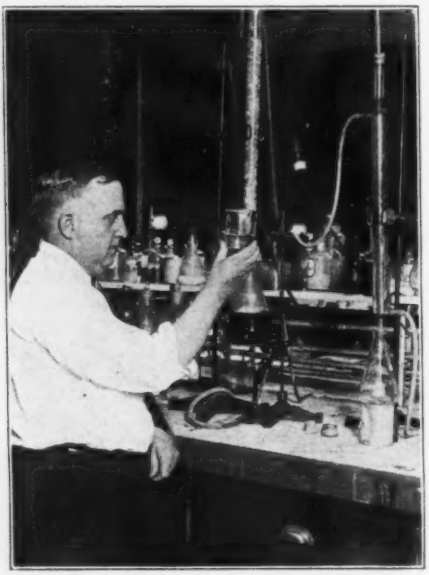
FIRST PAN-AMERICAN HEALTH CONVENTION

With delegates from practically every country in North and South America in attendance, the first Pan-American Conference of Directors of Public Health met in September in Washington, D. C.

Left to right, the picture shows: D. Alfonso Pruneda, rector of the National

University of Mexico, vice president; Surgeon General Hugh S. Cumming of the U. S. Public Health Service, president; and Dr. Sebastian Lorente, director-general of Public Health of Peru.



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TO THWART THE BOOTLEGGER

The Government, in its efforts to enforce the provisions of the Volstead law, is now trying to find some way to denature alcohol so that it cannot be redistilled and used for beverage purposes.

Dr. W. Z. Linder, assistant chief of the industrial alcohol and chemical division of the prohibition unit, is the man in charge of this work.

CIVIL SERVICE EXAMINATIONS

Applications will be received until December 30, 1926, for appointments as *Junior, Assistant* and *Associate Medical Officer, Medical Officer* and *Senior Medical Officer.*

There is especial need for medical officers qualified in tuberculosis and neuropsychiatry.

Salaries range from $1,860.00 to $6,000.00 a year.

Applications for appointment as *Medical Interne* (*Psychiatric*) will be received until December 30, 1926. Salary $1,860 a year.

—

Applications for appointment as *Senior Medical Technician* (*Pathology*) will be received until November 9, 1926. Salary $1,860 to $2,400 a year.

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Write to the U. S. Civil Service Commission, Washington, D. C., for full particulars.

MEDICAL BIOLOGY COURSE

The Michigan State College of Agriculture and Applied Science will offer, beginning with the Fall of 1926, a full college course for the training of technical laboratory experts, bacteriologists, serologists, chemists and pathologists. For full particulars address Dr. Ward Giltner at the College, East Lansing, Mich.

RESEARCH ON SURGICAL SUPPLIES

Dr. Frederick H. Slayton has been appointed by Johnson and Johnson who manufacture surgical supplies, as a research fellow in the Mellon Institute of Industrial Research, Pittsburgh, to study the needs of surgeons and other medical men with a view to developing new surgical supplies and standardizing those now in use. All investigations will be made for the benefit of the public and reports of work done will be made.

EXAMINATIONS FOR AVIATORS

Legislation of the last Congress brought into existence the *Bureau of Aeronautics* which is a bureau of the Department of Commerce. An Assistant Secretary is to be appointed in charge of this Bureau.

The Legislation provides that this Bureau shall have charge of the licensing of all commercial pilots. The process of licensing will include physical examination.

Fewer than fifty medical men in the United States (aside from some one hundred army and navy officers) *are qualified to make these air-pilot physical examinations.*

Members of the medical profession must prepare themselves for the new demand to be made of them. Now is the "psychological moment" to perfect oneself in the new technic of the medicine of aviation.

MEDICAL ATTENTION IN THE FLORIDA DISASTER

To show the magnitude of the medical problem which existed in Florida following the recent hurricane, the personnel of the *Herald-Examiner* relief train which went from Chicago carrying 35 doctors and 47 nurses, treated 5,221 cases; performed 4,426 operations; made 3,945 dressings many of which had been needed for several days; visited 1,572 homes; and gave 14,651 prophylactic treatments against typhoid and tetanus.

"CHILDREN"

For a long time we have had magazines devoted to the raising of hogs, cattle, dogs, flowers and other things. Now, at last, we have one which deals with the raising of children.

Children—A Magazine For Parents makes its first appearance with the October, 1926, issue.

It is a sightly and attractive periodical, and the stuff in it is sound and practical. If the publishers keep it up to the standard of this first issue, it ought to prove a valuable addition to the country's current literature.

BOOSTING THE FAMILY DOCTOR

The campaign of unsolicited publicity for the family doctor, as a class, which has recently been inaugurated by Reed and Carnrick ought to bear much good fruit for all concerned, as the material being sent out is well conceived and snappily put. You might suggest to the editor of your local paper that, when he receives the stuff, he should use some of it in reasonably prominent positions.

SCIENTIFIC STUDY OF DEATH

While death is a process through which we must all pass, it appears that very little reliable information exists as to the physiologic and psychologic phenomena attending this process, and that many helpful things might be learned by making and correlating such studies.

Dr. Authur MacDonald, of Washington, D. C., is engaged in such studies and is eager to enlist the interest of others. All who would like to take part in this valuable research should write to the doctor at The Congressional Apartments, 100 E. Capitol St., Washington, D. C., for full particulars.

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FIRST AID ALONG THE HIGHWAY

With so many accidents happening every day along our highways, it is a wonder that we have let England get ahead of us in inaugurating the novel and practical service shown above. Guilford, in Surrey, is the first district to establish these roadside first aid stations.

The box on the post is supplied with everything needed for ordinary temporary dressings and the key to it is in a compartment with a glass front which is broken in case of emergency. After use this key is dropped into the nearest letter box and so returned to the ambulance station.

HEALTH EXAMINATIONS

The *Executives' Service Bulletin* is boosting periodic health examinations and disseminating popular information about them. So are many other agencies. If you aren't ready to make such examinations, better get ready, promptly!

Every child should have mud-pies, grasshoppers, water-bugs, tadpoles, frogs, mud turtles, elderberries, wild strawberries, acorns, chestnuts, trees to climb, brooks to wade in, water-lilies, woodchucks, bats, bees, butterflies, various animals to pet, hay fields, pine cones, rocks to roll, sand, snakes, huckleberries and hornets; and any child who has been deprived of these has been deprived of the best part of his education.—Luther Burbank.

Supreme Court Upholds American Drugs

A decision of the highest importance to every physician, pharmacist, drug manufacturer and, in fact, every user of drugs in the United States was rendered by the Supreme Court of the United States on October 11, 1926, when this highest tribunal of the Nation declared that the Chemical Foundation has been acting legally and properly in the purchase of the foreign drug and chemical patents, during the War, and licensing American Manufacturers to produce these essential substances in this country.

The sale of the German patents to the Chemical Foundation took place during President Wilson's administration and had, without doubt, a distinct influence upon the outcome of the War, because this transfer permitted American concerns to begin at once the production of various drugs and chemicals which had, theretofore, been made only in Germany, and whose importation ceased with our entry in the war.

President Harding, apparently laboring under some misapprehension as to the purpose and function of the Chemical Foundation directed that suit be brought by the Government to set aside the sale of these patents to the Foundation.

The case was first tried in the Federal District Court of Wilmington, Del., and resulted, after weeks of evidence taking, in a finding against the Government on all points.

The case was appealed to the Circuit Court, which upheld the decision of the District Court in every particular.

A final appeal carried the question to the Supreme Court of the United States, where evidence was heard more than a year ago. The long delay in rendering a decision has afforded time for mature consideration. The Court has decided unanimously that the sale to the Chemical Foundation was valid and legal and that the Foundation has made no improper use of the powers which it thus acquired.

This decision is a momentous one for everyone who has anything to do with drugs and chemicals in any way whatever.

To the physician it means that he will have a steady and regular supply of reliable drugs, of American Manufacture, which can never again be upset or cut off by the vicissitudes of war. The same considerations apply to the pharmacists. Among the vitally necessary drugs affected may be mentioned the arsphenamines, cinchophen, barbital, the flavines, procaine and a host of others.

To the drug manufacturer, who has invested thousands of dollars in apparatus for the manufacture of drugs and chemicals under the Foundation's licenses, it means relief from a certain degree of anxiety (though the outcome of the case could scarcely have been in doubt) and a tremendous inspiration to further investigagations looking to the production of more and better drugs and chemicals for America.

To the nation at large, it means that reliable medicines will continue to be sold at reasonable prices; and, more or less indirectly, that research in the matter of chemical warfare will be stimulated.

Nor are medicine and pharmacy the only lines of endeavor affected by this momentous decision. The steel and packing industry and many others will be vastly benefited by the freedom of chemical investigation and activity which is now assured them.

EDITOR

Send for This Literature

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